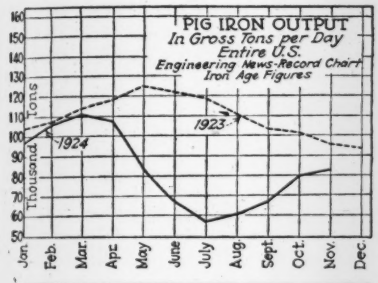
CONSTRUCTION NEWS

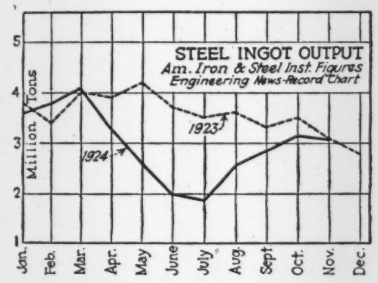
Engineering News-Record, December 25, 1924

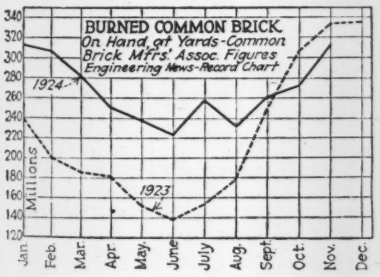
The Construction Barometer

Revival of Industrial Activity Indicated by Decline in Part Time Employment—Marked Gains in Iron, Steel and Lumber Demand

THE slow but gradual increase in the number of working hours per week per wage earner, is possibly the best indication, visible at the present time, of a revival of industrial activity during the first quarter of the coming year. Contract letting for industrial construction, as yet, shows no perceptible gain. In the South, however, lettings have shown no decrease since the second week of the current month. Lettings for private commercial buildings are most active in the Mid-West and the Middle Atlantic states. Water-works contracts are gaining in the states immediately west of the Mississippi. There is no marked activity in other classifications despite the urge to adopt heavier winter building programs.




STEEL INGOT OUTPUT
Am. Iron & Steel Inst. Figures
Engineering News-Record Chart
Million Tons
1923
1924
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.



Engineering News-Record Statistics

Minimum on waterworks and excavations $15,000; other public work, $25,000; industrial buildings, $40,000; commercial buildings, $150,000.

VALUE OF LARGE CONTRACTS LET IN THE UNITED STATES

Week Ended	Public Work	Private Work	Total Contracts
Dec. 4	$10,602,000	$20,190,000	$30,792,000
Dec. 11	7,782,000	13,315,000	21,097,000
Dec. 18	11,664,000	30,537,000	42,201,000
3 weeks	$30,048,000	$64,042,000	$94,090,000

LARGE BUILDING CONTRACTS—NUMBER AND VALUE

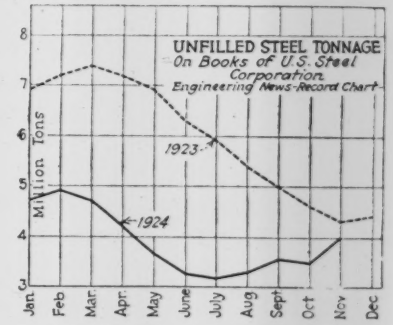
	Commercial				Industrial	
Week Ended	Public No.	Public Thousand	Private No.	Private Thousand	No.	Thousand
Dec. 4	16	$3,682	34	$11,004	28	$5,024
Dec. 11	8	2,443	24	8,285	19	1,560
Dec. 18	9	1,207	41	20,927	25	7,918
3 weeks	33	$7,332	99	$40,216	72	$14,502

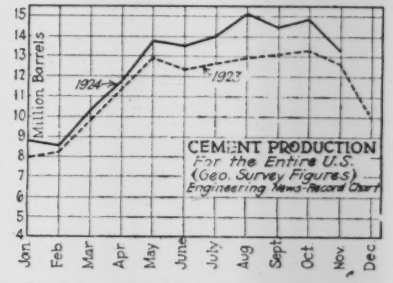
NUMBER OF LARGE JOBS NOW OUT FOR BIDS

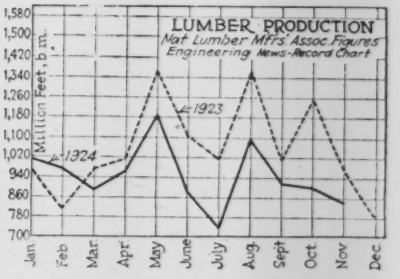
Week Ended	Private	Commercial Buildings	Streets and Roads	Waterworks and Sewers	All Public
Dec. 4	28	40	50	22	150
Dec. 11	25	34	44	19	144
Dec. 18	31	44	54	21	163

NO RISE IN STRUCTURALS IN THREE WEEKS AT PITTSBURGH

	Quoted on Dec. 25 at	Last Price Change Was	On
Structurals, Pittsburgh, 100 lb.	$2.00 @2.10	1.85 @2.10	Dec. 4
Cement, Chi., net bbl.	2.20	2.10	Jan. 24
Pine, N. Y., M. ft.	58.00	55.00	Dec. 11
Fir, San Fran., M. ft.	29.00	31.00	Oct. 30
Common labor, hr.	.56½	.56	Nov. 27


UNFILLED STEEL TONNAGE
On Books of U.S. Steel Corporation
Engineering News-Record Chart
Million Tons
1923
1924
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.





Waterworks

PROPOSED WORK

S. C., Landrum—Retained Spoon & Lewis, consult. engrs., Greensboro, N. C., to prepare plans and supervise construction water and sewerage systems. $100,000 available.

O., Painesville—Plans new filters, 1 m.g. capacity, centrifugal pumps and concrete filter beds. $125,000. Hadlow, Hick & Co., Finance Bldg., Cleveland, engrs.

Wis., LaCrosse—Plans 6 and 8 in. mains in Losey Blvd., 13th Pl., Losey Blvd., 13th, Green Bay, Travis, St. Andrew and Powell Sts. $16,000. C. C. Congdon, City Hall, engr.

Wis., Lancaster—Plans installing 100 hp. oil engine to pump water supply. $12,000. F. B. Barnett, city clerk.

Neb., Falls City—Plans reservoir 1,500,000 gal. daily capacity, piped from Nemeha River. $50,000. Prince & Nixon, Omaha, engr.

Mo., Fredericktown—Making plans new waterworks. $112,000 bonds voted. C. A. Haskins, 517 Finance Bldg., Kansas City, engr.

Mo., Salem — Election Dec. 30, $90,000 bonds waterworks, distribution systems, sewers, etc. Alexander Eng. Co., 517 Woodruff Bldg., Springfield, engrs.

Tex., Corpus Christi — Making surveys reservoir for irrigation purposes in Nueces Co. and to provide water for city, also rein.-con. dam across Nueces River. $600,000. Address Mayor.

Tex., Spur — Voted and sold $25,000 bonds waterworks. Engineer not selected.

Okla., Enid—Making surveys additional water supply. $1,500,000. Black & Veatch, Mutual Bldg., Kansas City, Mo., engrs.

Calif., El Centro—City plans to purchase 5 m.g. rapid sand filter washing machine for water system. J. A. Schofield, city clk.

Calif., Los Angeles—Election Jan. 15, $1,300,000 bonds, water system in Laurel Canon Sect.

Calif., Manhattan Beach (P. O. Manhattan)—Plans election $15,000 bonds water system extensions. L. Price, city clk.

Calif., Santa Barbara—Plans to purchase new services, meters and mains for water improvements. $235,000. H. Nunn, city mgr.

BIDS DESIRED

N. Y., Brooklyn—Dec. 29, by Commissioner Water, Gas & Electricity, Municipal Bldg., New York, mains in Bedford, Hamilton and Highlawn Aves., etc.; high pressure fire service mains in Brighton Beach, Mermaid and Neptune Aves., etc., here.

N. Y., Long Island City—Dec. 30, by Commissioners Water, Gas & Electricity, Municipal Bldg., New York, mains in Bradley and 4th Aves., etc., here.

Mich, Detroit—Dec. 29, by G. J. Finn, 710 Marquette Bldg., 1,250 tons 12 in. Class C

Waterworks (Continued)

c.i., or 2,725 ft. centrifugal pipe, and 2,000 tons 8 in. Class B c.i. or 5,265 ft. centrifugal pipe. G. H. Fenkell, 232 East Jefferson Ave., genl. mgr. Water Bd.

Wis., Madison—Jan. 2 (extended date), at office H. C. Buser, city clerk, 18,222 lin. ft. 30 in. c.i. mains in various streets. City will furnish pipe. Noted Dec. 18.

Wis., Menasha—Jan. 6, by J. F. DeCaro, city clk., 10,404 ft. 6 and 8 in. c.i. mains, 27 specials, 17 hydrants, twelve 6 in. and ten 8 in. inside screw gate valves.

Minn., St. Paul—Dec. 30, by H. W. Austin, city purch. agt., 8,880 c.i. water pipe, 12 ft. lengths, for Water Dept. G. M. Shepard, city engr.

Kan., McDonald Jan. 6, by H. J. Hollenbeck, city clk., 50,000 gal. tank on 100 ft. tower, 6,768 ft. 4- to 8-in. c.i. or McWane pipe, 4,500 ft. 2 in. galvanized, McWane or Simplex cast pipe, 14 valves and boxes, 15 hydrants, one 2 stroke 125 g.p.m. deep well pump, 10 in. tubular deep well, etc. $30,000. Henningson Eng. Co., Natl. Bldg., Omaha, Nebr., engrs. Noted Dec. 18.

BIDS RECEIVED

Ill., Oak Park—Maury & Gordon, consult. engrs., 1445 Monadnock Blk., Chicago, Dec. 17, 5 m.g. rein.-con. reservoir, from W. J. Newman Co., 21 North Curtis St., Chicago, $129,750. Noted Nov. 27.

CONTRACTS AWARDED

Mass., Boston—Supply Dept., City Hall, from B. Nicoll, Singer Bldg., New York City, 2,200 tons c.i. mains, 6, 8 and 10 in. $52.50 per ton, 12-in. $52.00 per ton, 16, 24, 30, 40, and 42-in. $52.25 per ton, special castings $119.50 per ton, to Pub. Wks. Dept., Div. Water Serv. Noted Dec. 11.

Mass., Medford—Water Dept., 130 tons 6 in. c.i. pipe, 12 ft. lengths, to Warren Fdry. Co., 201 Devonshire St., Boston, $59.50 per ton.

N. J., Spring Lake—Water softening system, 650 hp. repairs to 6 artesian wells, pumping engine for Spring Lake Waterworks, to J. L. Sweigard Co., Lincoln Bldg., Phila. $18,675. Noted Dec. 11.

O., Cleveland—Cuyahoga Co., 3,200 ft. 6- to 12-in. c.i. mains in various streets, to Yahya Bros., 3196 West 25th St., $25,756.

O., Cleveland—Cuyahoga Co., 7,000 ft. 6 and 8 in. c.i. mains in Impt. 68, to Joseph Co., Prospect-Fourth Bldg., $34,069. Noted Dec. 18.

Mich., Detroit—Water Bd., 1,000 tons 16 in. Class C c.i. pipe in 12 ft. lengths, and 1,000 tons 6 in. Class B c.i. pipe, to Natl. Cast Iron Pipe Co., Tarrant City, Birmingham, Ala., $91,900.

Mich., Detroit—Bd. Water Comrs., 176 East Jefferson Ave., 30,031 ft. 60 in., 9,566 ft. 48 in. and 8,330 ft. 36 and 42 in. steel mains, etc., to M. R. Hanna Co., 1636 Dime Bank Bldg., $1,116,545. Noted Nov. 27.

Mich., Detroit—Water Bd., 232 East Jefferson Ave., 600 tons c.i. pipe, 12 ft. lengths, to J. B. Clow & Sons, 400 Penobscot Bldg., $46.75 per ton, and 650 tons c.i. pipe, 16 ft. lengths to Lynchburg Fdry. Co., Lynchburg, Va., $47.77 per ton.

Wis., Eau Claire—To W. H. Hobbs Supply Co., Eau Claire, 750 tons c.i. pipe at $40.00 per ton; and will extend mains in various streets, by day labor. $15,000 appropriated. J. T. Hurd, City Hall, engr.

Wis., Park Falls—Waterworks improvements, trenching, to Phelps-Drake Co., 623 Metropolitan Life Bldg., Minneapolis, Minn., $13,345; 125,000 gal. elevated steel tank, to Chicago Bridge & Iron Co., 608 South Dearborn St., Chicago, Ill., $11,700; c.i. pipe, to J. B. Clow & Sons, 544 South Franklin St., Chicago, Ill., $11,050. Noted Nov. 13.

Ark., Batesville—New 1 m.g. filter plant, with settling basins, motor driven centrifugal pumps, motors, wash water tank and chemical equipment, etc., to Standard Paving Co., Boston & Katy tracks, Tulsa, $51,-108. Engrs. est. $54,300.

Calif., Los Gatos — See "Streets and Roads."

Calif., Oakland—Fairmede Golf Club, 810 Oakland Bank of Savings Bldg., water system, 6.5 mi. galvanized pipe, sizes up to 8 in., pumping equipment and tanks, to C. M. Woods Co., Hobart Bldg., San Francisco.

S. A., Colombia, Bogota—See "Buildings —Commercial."

Sewers

PROPOSED WORK

Mass., Boston — City plans sewers in Agnes, Mildred and Fairview Aves., in Hyde Park and Dorchester Dists. $25,000. J. A. Rourke, comr.

S. C., Landrum—See "Waterworks."

O., Cleveland—Made plans sewage disposal plant, screen buildings, pump house, office, venturi house, pumping building and dosing tanks, 100,000 cu.yd. earth excav., etc. $3,500,000. G. B. Gascoigne, 648 Leader-News Bldg., engr. Noted Oct. 2.

Mich., Detroit—Dept. Pub. Wks. making plans 8,913 ft. 10- to 24-in. vitr. sewers in Sewer 4252, 220 ft. 12 in. in Sewer 4280, 399 ft. 12 in. in Sewer 4282, 472 ft. 12- to 15-in. in Sewer 4284, 259 ft. 24 in. in Sewer 4287, 1,171 ft. 12- to 18-in. in Sewer 4288, 769 ft. 12- to 15-in. in Sewer 4289, 146 ft. 10 in. in Sewer 4291. G. Jerome, city engr.

Kan., Quenemo—Defeated $42,500 bonds for waterworks and sewers. Noted Oct. 9.

Mo., Salem—See "Waterworks."

Mo., St. Louis—Bd. Pub. Serv., W. W. Horner, engr., 300 City Hall, prepared plans soon takes bids 3,415 ft. 8- to 21-in. vitr. clay sewers, etc., in Glaise Creek Dist. Sewer 15, and 3,885 ft. 8- to 24-in. vitr. clay sewers, etc., in Rock Creek Sewer 9.

Tex., Del Rio—Voted $50,000 bonds sanitary and flood sewers. Address W. F. Easterling, mayor. Engineer not selected.

Tex., San Angelo—Election soon $200,-000 bonds sewage disposal plant. E. I. Jackson, mayor. Engineer not selected.

Tex., San Saba — Making preliminary plans sewerage system, disposal plant and main extensions in various streets, $70,000. Terrell, Bartlett Engineers, 612 Calcasieu Bldg., San Antonio, engrs. Noted Nov. 27.

Tex., Spur—Voted $33,000 bonds sewerage system and disposal plant. Engineer not selected. Address Mayor.

Okla., Pittsburg—Election Dec. 27, $27,-000 bonds for 25,600 ft. 6- to 12-in. vitr. clay sanitary sewers, Imhoff tank, etc. Gant Baker Co., 1116 West Main St., Oklahoma City, engrs.

Calif., Alhambra—Made plans 1 mi. 48 in. rein.-con. storm sewer. M. H. Irvine, city engr.

Calif., Brea — Plans election $60,000 bonds, for sewer improvements.

Calif., El Segundo—Making plans combined gravity and pumping sanitary sewerage system to serve population of 3,000 to 15,000. R. T. Hutchins, city engr. Noted Oct. 30.

Calif., Los Angeles—Los Angeles Co. rejected bids for 1 mi. Sycamore Canyon Storm Drain, Sect. 2, and 1.5 mi. Sect. 3. H. A. Van Norman, city engr. Noted Oct. 16.

BIDS DESIRED

Mass., Melrose—Dec. 27, at office R. J. Mosher, supt. Dept. Pub. Wks., City Hall, trunk sewer in Sects. 1, 2 and 3, East Side. $25,000.

N. J., Millville—Jan. 2, by Bd. Comrs., City Hall, furnishing materials for constructing storm sewers in various streets.

Md., Baltimore—Dec. 31, by Bd. Awards, 2,060 ft. 15 in. sanitary sewers, in Dist. 4, Contr. 221. B L. Crozier, City Hall, highways engr.

Wis., Milwaukee—Dec. 29, by Bd. Pub. Wks., sanitary sewers in 57th St. and 6th Ave., 961 ft. 8 in., 722 ft. 12 in., and 1,931 ft. 21 in. pipe; combined sewers in Mineral St., 14th and Harrison Aves., 66 ft. 8 in. and 590 ft. 12 in. pipe; storm sewers in HiMount Blvd., 58th and 53rd Sts., 4th and Pabst Aves., 951 ft. 8 in., 577 ft. 15 in. and 3,777 ft. 36 to 48 in. monolithic concrete pipe, etc.

BIDS RECEIVED

N. Y., Brooklyn—E. Riegelmann, boro. pres., Boro Hall, Dec. 17, repairing sewers in Hoyt St., from Manmill Constr. Co., 2035 Douglass St. $8,446; repairing rakes, screens, pumps, etc., in Caisson 2, West 12th St. and Neptune Ave., from C. L. Riker, 40 Vista Pl., Dongan Hill, $5,980. Noted Dec. 11.

Wis., Milwaukee — J. H. Fowles, secy. Sewerage Comn., 508 Market St., forced and induced fan equipment for filter and dryer house on Jones Island, from Baylet Mfg. Co., 732 Greenbush St., $12,853. Noted Dec. 4.

CONTRACTS AWARDED

R. I., Cranston — Storm sewer in East End, to J. H. Ferguson, 22 Parkman St., Dorchester, $29,999. Engrs. est. $35,000.

N. Y., Brooklyn—R. Riegelmann, boro. pres., Boro Hall, **(e. e. means engineers estimate)**, to Tomasetti & Co., Inc., 133 60th St., sewers in Lefferts Ave. 71.41% e. e. $14,696, Schenck Ave. 68.68% e. e. $12,099; to S. Coenzo, 678 Glenmore Ave., East 43rd St. 70% e. e. $8,126, 64th St. 72.95% e. e. $5,462, 73rd St. 75% e. e. $3,997, East 48th St. 74% e. e. $2,815; to Tozzi Contg. Co., 136 63rd St., 15th Ave. 69% e. e. $1,400. Noted Dec. 11.

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, sewer in Flatlands Ave. between Ralph Ave. and Avenue I, and Schenectady Ave. between Aves. I and H, to P. J. Carlin Constr. Co., Grand Central Terminal, New York City, $3,252,124. Noted Nov. 27.

Ky., Louisville—For 4,500 ft. rein.-con. trunk sewer, 6 ft. 5 in. x 9 ft. 7.5 in. in section, 4,200 ft. tunnel, and 300 ft. open cut, to Hammen & Co., 4612 Woodward Ave., Detroit, Mich., $62,000. Noted Dec. 4.

Wis., Beloit — City will purchase vitr. pipe and install storm sewers in 8 blocks various streets, by day labor. [illegible] E. Heebink, City Hall, engr.

Kan., Argentine—Atchison, Topeka & Santa Fe R.R. Co., 406 Delaware St., Topeka, 5,400 ft. vitr. clay sewer, pump house, etc., here, to W. C. Mullins Constr. Co., 202 Nelson Bldg., Kansas City, Mo., $143,000.

Neb., Holdrege—See "Streets and Roads."

Neb., Lincoln—See "Streets and Roads."

Tex., Houston — Storm sewer in Telephone Rd., to A. E. Quay, 1st Natl. Bank Bldg., Houston, $22,250. Engrs. est. $25,-000. Noted Oct. 23.

Ore., Portland—Dept. Pub. Wks., 4,591 ft. sewer in East 21st St., to J. A. Terry, Portland, $19,890; also sewer in Thompson St. from 28th to 33rd Sts., to A. D. Kern, Exchange Bldg., $31,846.

Waste Disposal

CONTRACTS AWARDED

S. A., Colombia, Bogota—See "Buildings —Commercial."

Bridges

PROPOSED WORK

N. H., Nashua—Plans new bridge. $400,-000. E. Sargent, mayor. Engineer not selected.

Tennessee — State Dept. Hys. & Pub. Wks., Nashville, plans bridge over Obion River, in Dyer and Obion Counties, and bridge over French Broad River, near Bridgeport, Cocke Co. J. G. Creveling, highway comr.

Wis., Lone Rock — State Hy. Comn., Madison, plans bridge over Wisconsin River, here. $135,000, state to appropriate $67,500, Iowa Co. (Dodgeville) $33,750, Richland Co. (Richland Center) $27,000, and Sauk Co. (Baraboo) $6,750 toward cost. J. T. Donaghey, highway engr.

Iowa and Wisconsin—Cities of McGregor, Ia., and Prairie du Chien, Wis., also both States, plan bridge over Mississippi River. $550,000-$700,000. J. F. Jackson, Milwaukee, Wis., engr.

Missouri—State Hy. Dept., Jefferson City, making plans one 200 ft. steel truss and two 45 ft. rein.-con. deck girder spans over Spring River, and three 20 ft. and two 18 ft. rein.-con. slab spans over stream, all Jasper Co.; 19 rein.-con. slab spans, etc., over overflow Medicine Creek, one 80 ft. steel truss, and four 30 ft. I-beam spans, etc., over Medicine Creek D. D., one 80 ft. steel truss span and four 20 ft. I-beam spans, etc., over Medicine Creek, two 12 ft. rein.-con. slab spans, etc., over Leeper Creek, all Livingston Co.; three 30 ft. rein.-con. deck girder spans, etc., over Schulte Creek, three 45 ft. rein.-con. deck girder spans, etc., over Second Creek, and four 20 ft. slab spans, etc., over Peno, all Gasconade Co. B. H. Piepmeier, ch. engr.

Tex., Brownsville — Cameron Co. takes bids after Jan. 6, 2 span, 150 ft. steel and concrete bridge with 2 creosoted pile trestle approach across Arroyo Colorado, on State Highway 12. $70,000. W. O. Washington, Brownsville, engr.

Tex., Linden—See "Streets and Roads."

Okla., Ralston—Osage Co. (Pawhuska) and Pawnee Co. (Pawnee), making preliminary plans about 1,200 ft. riveted steel truss bridge with 18 ft. concrete highway, over Arkansas River, near here. $200,000. J. M. Page, engr.

Okla., Tecumseh—Pottawatomie Co. making preliminary plans 2 span 90 ft. rein.-con., concrete and steel bridge over Squirrel Creek, near here. $32,000. F. D. Brown, Shawnee, engr.

Ore., Portland—Making plans and takes bids in May, 1 span rein.-con. arch bridge over Camon Rd., on Ford St. $165,000-$175,000. A. Laurgaard, City Hall, engr.

Calif., Pismo (Pismo Beach P. O.)—San Luis Obispo Co. (San Luis Obispo) appropriated $25,000 for bridge, here.

BIDS DESIRED

S. D., Vivian—Dec. 30, by State Hy. Comn., Pierre, three 130 ft. steel truss and two 20 ft. I-beam approach span bridge over White River on State Aid Project 113, 12,038 lb. reinforcing, 285, 480 lb. structural steel, etc. F. D. Hudgins, ch. engr.

Tex., Carrizo Springs—See "Streets and Roads."

Calif., Redwood City—Dumbarton Highway Bridge Corp., Santa Fe Bldg., San Francisco, taking bids approximately 5,600 ft. bridge with nine 200 ft. steel and concrete spans, 24 ft. roadway over San Francisco Bay, at Dumbarton Crossing, San Mateo Co., 4,000 lin.ft. combination steel and concrete trestle, concrete piles and steel beams. $2,000,000. J. L. Harrington, c/o owner, engr.

BIDS RECEIVED

Pennsylvania — Delaware River Bridge Joint Comn., 806 Widener Bldg., Phila., Dec. 17, portion of Camden approach from 3rd St. to point east of 5th St., Contr. 20, for bridge over Delaware River, connecting

Bridges (Continued)

Phila., Pa., and Camden, N. J., from O'Neill Co., 231 Spring Garden, Phila., $408,161. Noted Nov. 27.

Ohio—See "Streets and Roads."

Ohio—Dept. Highways & Pub. Wks., Columbus, Dec. 12, bridge and approaches on Sect. G, Hamilton-Eaton Rd., Butler Co., from A. Hammer, Hamilton, $11,507; concrete bridge on Sect. C, Caldwell-Woodsfield Rd., Noble Co., from Ready Bros., Warren, $11,751; standard beam bridge on Sect. C, Delaware-Marysville Rd., Union Co., from Grindell & Gray, Richmond, $4,478. Noted Dec. 4.

Illinois—See "Streets and Roads."

Illinois — Dept. Pub. Hys. & Buildings, Div. Highways, Springfield, Dec. 17, four 160 ft. and one 95 ft. steel span and nineteen 53 ft. concrete girder spans, on Route 2, Sects. 73-B and C, Randolph Co., 1,033,-320 lb. structural steel, from W. H. Shons, 11 South Liberty St., Freeport, $204,000, one 30 ft. and one 35 ft. concrete girder spans, on Route 8, Sect. 42 B, Knox Co., from F. J. Smith, Tipton, Ia., $15,959, one 50 ft. concrete girder bridge on Route 14, Sect. 10-B, Hamilton Co., from Gaines Bros., Fairland, Okla., $7,420, three 35 ft. and five 46 ft. girders and one 24 ft. slab span on Route 15, Sect. 14-B, Jefferson Co., from H. R. Wood, Mt. Vernon, $37,691, 2 girders, one two 50 ft. and other three 50 ft. on Route 20, Sect. 20-B, Lake Co., from J. H. Hineman & Sons, Glenwood City, Wis., $41,588; substructure for two 100 ft. steel spans on Route 31, Sect. 15-B, Schuyler Co., from Adams Constr. Co., Minneapolis, Minn., $17,911; two 100 ft. steel span superstructure on Route 31, Sect. 15-C, Schuyler Co., 181,080 lbs. steel, from Illinois Steel Bridge Co., Jacksonville, $13,558, one 40 ft. girder, one 125 ft. steel span substructure and six 50 ft. girder approach spans, on Route 33, Sect. 3-B, Jasper and Crawford Counties, from V. P. Conner, Newton, $38,-748; one 125 ft. steel span superstructure, 127,420 lb. structural steel, Route 33, Sect. 2-C, Jasper and Crawford Counties, from Vincennes Bridge Co., Vincennes, Ind., $9,281. Noted Dec. 4.

Tex., Alice—See "Streets and Roads."

Tex., Jacksboro — See "Streets and Roads."

CONTRACTS AWARDED

Tex., Eagle Pass—International Bridge Co., El Paso, 2 span, 240 ft. rein.-con. and steel bridge, across Rio Grande River, near here, to G. D. Key, Oklahoma City, Okla. $200,000.

Que., Manlwaki—Dept. Provincial Highways, Quebec, 4 span 522 ft. concrete and steel bridge over Gatineau River, here, to Dominion Bridge Co., Lachine, $48,720. Engrs. est. $50,000.

Ont., Ottawa—Ottawa Impvt. Comn., 53 Queens St., steel bridge over Ottawa River, to Dominion Bridge Co., 51 Sparks St., approximately $55,000.

Dams

PROPOSED WORK

Tex., Corpus Christi—See "Waterworks."

Tex., Lockhart—State Engineering Dept., Austin, making plans 80 ft. rein.-con. dam 10 ft. high across Guadalupe River, near here, for State. $25,000.

Railways

PROPOSED WORK

Missouri — St. Louis-Kansas City Short Line R.R., St. Louis, (recently incorporated) plans 238 mi. standard gauge electric railroad from St. Louis through Greve Coeur, St. Charles, Warrenton, Jonesboro, New Florence, Columbia and New Franklin, crossing Missouri River at Arrow Rock and thence through Marshall, Higginsville and Independence to Kansas City. L. Dunlap, 3524 Morrell Ave., Kansas City, (one of incorporators).

CONTRACTS AWARDED

Wisconsin—City of Superior, laying 5 mi. additional trackage in Great Northern R.R. ore yards, and overhauling Iron Ore Docks 1, 3 and 4 at Allouez Bay, to Peppard & Fulton, 217 Board Trade Bldg., $250,000 plus percentage basis.

Wisconsin—Milwaukee Electric Railway & Light Co., Pub. Serv. Bldg., Milwaukee, grading for approximately 8 mi. railway, from Milwaukee to point near South Milwaukee, to A. Lynch, 1502 Cedar St., Milwaukee; will lay track by own forces.

Oklahoma—Tulsa & Santa Fe R.R. Co., c/o Atchison, Topeka & Santa Fe R.R. Co., 179 West Jackson Blvd., Chicago, Ill., making preliminary surveys 1 mi. track in industrial section, in Tulsa. $30,000. C. W. F. Felt, ch. engr.

CONTRACTS AWARDED

South America — See "Buildings—Commercial" under Colombia, Bogota.

Excavation, Drainage, Irrigation, Levees

PROPOSED WORK

Ark., Jonesboro—D. D. 29, Craighead Co., making preliminary plans and takes bids about March 15, 21 mi. levees along St. Francis River, also 54 mi. drainage ditches and cleaning out old ditches. $475,000. Cobb & Lee, Jonesboro, engrs.

Tex., Corpus Christi—See "Waterworks."

Okla., Bixby — City and Wagoner Co. making preliminary surveys draining city and portion of county. $30,000. Hughes Eng. Co., Cole Bldg., Tulsa, engrs.

Okla., Oklahoma City — Making preliminary surveys straightening channel of North Canadian River through East Capitol Hill. Election in spring $37,500 bonds for same. B. M. Hart, City Hall, engr.

BIDS DESIRED

N. Y., New York—Dec. 30, by Commissioner Docks, Pier A, North River, dredging between Piers 58 and 62, North River, Contr. 1849.

CONTRACTS AWARDED

Ark., Jonesboro—Garrett Camp D. D. 28, Craighthead Co., to Crumpecker & Adams, Morehouse, Mo., 541,487 cu.yd. excav. in Ditches 1, 2, 3 and 4 at $0.085 and 54,784 cu.yd. in Ditch 5, at $0.17; Thompson Creek D. D. 27, to A. V. Willis & Sons, Buder Bldg., 8 mi. drainage ditches, etc., about 400,000 cu.yd. from floating dredge near Brookland, approximately $45,000. Noted Oct. 16.

Calif., Colusa Sacramento River West Side Levee Dist., Colusa Co., to Olympian Dredging Co., 249 1st St., San Francisco, 258,000 cu.yd. levee, using dredge with horizontal reach of 160 ft. at $9.91 per hr. or $0.0973 per cu.yd., dredge with horizontal reach of 125 ft. $13.08 per hr. or $0.0118 per cu.yd. (not yet decided which bid to accept).

Calif., Oakdale—M. P. Kearney, secy. Oakdale Irrigation Dist., Stanislaus Co., will build Boardman, Patterson, Peterson, and Crane Drains, near here, also Minnear Drain, etc., near Riverbank, by day labor R. E. Hartley, ch. engr. Noted Nov. 27.

Calif., Tracy—Banta—Carbona Irrigation Dist., foundations, pumphouses, etc., 2,000 cu.yd. rein.-con., 85 tons structural steel and 40,000 cu.yd. excav., to Youdall Constr. Co., Matson Bldg., San Francisco, $89,600. Noted July 24.

Streets and Roads

PROPOSED WORK

Mass., Somerville—Plans widening Mystic St. $25,000. E. W. Bailey, city engr.

Miss., Meridian—Lauderdale Co. election Jan. 6, $400,000 bonds, improving 47 mi. various highways. Former election defeated. J. W. Parker, mayor. Noted Nov. 20.

La., Kentwood—Soon takes bids graveling 40 mi. roads in 1st and 2nd Wards. E. G. Frieler, Hammond, engr.

La., Minden—Soon takes bids concrete paving 22,000 sq.yd. various streets.

Ohio—Dept. Highways & Pub. Wks., Columbus, cancelled bids which were to be opened Dec. 12, grading, bridging and paving 1.187 mi. Sect. E-1 Lima-Spencerville Rd., Allen Co., 3,636 mi. Sect. V, Cincinnati-Dayton Rd., Butler Co., 0.329 mi. Sect. Monroe, Cincinnati-Dayton Rd., Butler Co., 3.666 mi. Sect. W-1, Cincinnati-Dayton Rd., Butler Co., 4.839 mi. Harrisville-Westville Rd., Columbiana and Mahoning Counties, 0.979 mi. Sect. Newcomerstown, Uhrichsville-New Comerstown Rd., Tuscarawas Co., 0.637 mi. Sect. Newcomerstown, Tuscarawas Co.; graveling 3.798 mi. Sect. D, Columbus-Wooster Rd., Holmes and Wayne Counties. Noted Dec. 4.

O., Cincinnati—Plans improving 1,175 ft. Grandin Rd., 32 ft., 29,000 cu.yd. grading, 2,350 lin.ft. concrete curbing, 500 lin.ft. cement sidewalk, etc. $58,753. F. Krug, City Hall, engr.

O., Guernsey—Guernsey Co. plans during spring, improving 4.5 mi. Claysville Rd., $34,000; and resurfacing 1.3 mi. Kimbolton-North Salem Rd., $27,000, both 16 ft.

O., Lisbon—Columbiana Co. plans improving 2.5 mi. East Rochester-North Georgetown Rd., paving blocks or concrete. $75,000. L. C. Kirk, Lisbon, engr.

O., New Philadelphia — Tuscarawas Co. plans rein.-con. paving 1 mi. State St., 12 or 18 ft., $30,000-$35,000. E. Stingel, New Philadelphia, engr.

O., Youngstown—Bd. Control takes bids in spring improving Heanny Court, $25,-000, Plymouth Ave. $35,000, Edwards Ave. $40,000; also paving Brentwood Ave. $35,-000. G. Turner, Youngstown, engr.

Ind., Williamsport — Warren Co. plans grading and graveling, 16,259 ft. Gardner Rd., 24 ft. $26,043. J. R. Gregory, Williamsport, engr.

Ill., Galesburg—Plans during 1925, grading, vitr. brick paving, curbing, etc., various streets. $250,875. A. L. Richey, City Hall, engr.

Ill., Springfield — Plans grading, curbing, guttering, etc., 1st St. $150,000. W. Seelig, City Hall, engr.

Wis., Eau Claire—Plans paving 1st Ave., Bway., Platt and 3rd Sts., various types material considered. $50,000 appropriated. J. T. Hurd, City Hall, engr.

Wis., Hartford — W. Radtke, city clk., making preliminary plans paving 11 blocks Johnson and Wisconsin Sts., various types incl. concrete. J. Donohue Eng. Co., 608 North 8th St., Sheboygan, engrs.

Wis., Oshkosh—Plans paving Wisconsin and Sawyer Aves., 5th, 11th and 15th Sts.; also resurfacing Main St. and road in waterworks park. $25,000. G. Randall, City Hall, engr.

Minn., Center City—Chisago Co. made plans constructing Jobs 2501 and 2505, incl., grading and graveling, also constructing bridge on State Aid Rd. 4, north of North Branch. $30,000. H. L. Colwell, Center City, engr.

Minn., Duluth—F. W. Borgen, aud. St. Louis Co., opens bids about Feb. 8, improving 5 mi. East 6th Ave. and 9th St. to 14th St., Duluth, and Seven Lake Rd., St. Louis to connect with Miller Trunk Rd. $293,700. R. W. Acton, co. engr.

Minn., New Prague—Making plans paving, etc., about 15 blocks various streets. $55,000. Toltz, King & Day, Builders Exch., St. Paul, engr.

South Dakota—State Hy. Dept., Pierre, plans grading about 390.5 mi. in Aurora, Beadle, Brookings, Brown, Butte, Chas. Mix, Clark, Codington, Day, Dewey, Faulk, Hand, Hutchinson, Kingsbury, McCook, McPherson, Marshall, Minnehaha, Potter, Spink and Yankton Counties; also a bridge on Federal Aid Project 42, Brown Co. F. D. Hudgins, ch. engr.

Mo., Aurora—Takes bids in February or March grading, curbing, guttering and hard surfacing 25,000 sq.yd. various streets. Alexander Eng. Co., 517 Woodruff Bldg., Springfield, Mo., engrs.

Mo., Chaffee—Soon takes bids 4,000 cu.yd. grading, 13,000 ft. concrete curb and gutter, 15,600 sq.yd. 6 in. rein.-con. paving on 24 ft. street; 1,400 cu.yd. grading, 2,350 ft. curb and gutter, 4,750 sq.yd. 6 in. rein.-con. paving on 40 ft. streets. $66,578. C. E. Smith & Co., Ry. Exch. Bldg., St. Louis, engrs., c/o F. R. Nohl, Chaffee engr. in charge. Noted Nov. 13.

Mo., Maryville—Making plans paving 12 blocks various streets, with prospects of 20 more. E. T. Archer & Co., 609 New England Bldg., Kansas City, engrs.

Mo., St. Louis—Bd. Pub. Serv., W. W. Horner, engr., 300 City Hall, prepared plans, and soon takes bids rein.-con. surfacing 480 ft. Frederick St., 24 ft., $8,100; warrenite on concrete surfacing Famous St., 24 ft., $16,900, 1,000 ft. Euclid St., 30 ft. $23,600, 500 ft. Thelka St., 30 ft. $10,100; brick on concrete surfacing 600 ft. West Park St., 30 ft. $11,600; asphaltic concrete surfacing 500 ft. Dewey St., 26 ft. $9,900, 500 ft. Pennsylvania Ave., 30 ft. $5,800, 1,250 ft. Robert St., 25 ft. $21,700, 1,000 ft. Gustine St., 30 ft. $24,000, 900 ft. Concord Pl., 26 ft. $21,600, 1,400 ft. Greer St. $21,600, 800 ft. Margarette St., 26 ft. $11,-600; also concrete paving 5 alleys, 18 ft., $15,000.

Tex., Barstow — Ward Co. soon takes bids gravel surfacing 4.6 mi. State Highway 1, Federal Aid Project 391-B, 16 ft. $88,250. R. E. Booker, Barstow, engr.

Tex., Brownsville—Cameron Co. making plans grading, etc., 24.5 mi. State Highway 100, from Baneda to Point Isabel. $61,050. W. O. Washington, Brownsville, engr.

Tex., Carthage—Panola Co. takes bids about Jan. 10, surfacing 8.47 mi. State Highway 64, State Aid Project 558. $90,000. Titus & Dillon, Carthage, engrs.

Tex., Center — Shelby Co. takes bids after Jan. 10, gravel surfacing 5.02 mi. State Highway 35, Federal Aid Project 348-A. $84,400. Titus & Dillon, Carthage, engrs.

Tex., Del Rio — Voted $100,000 bonds permanent paving various streets. Address W. F. Easterling, mayor. Noted Dec. 11.

Tex., El Paso — El Paso Co. making plans permanent paving, hard base and topping Pershing Dr. between Towbridge and Cambridge Sts. $60,000. F. Wilson, El Paso, engr.

Tex., Linden—Cass Co. made plans and soon takes bids grading, gravel surfacing and bridging 3.09 mi. State Highway 1. $99,500. F. E. Hess, Linden, engr.

Tex., Lubbock — Voted $125,000 bonds, paving various streets. F. A. Friend, mayor. Noted Dec. 11.

Tex., Stamford—Jones Co., election Jan. 6, $70,000 bonds paving various streets. B. P. Davenport, mayor.

Tex., Stamford—Election Jan. 6, $70,-000 bonds permanent paving streets in

Streets and Roads (Continued)

business and residence districts. B. F. Davenport, mayor.

Tex., Wharton — Voted $65,000 bonds permanent paving various streets. Address Mayor.

Okla., Lawton — Defeated $30,000 bonds grading and paving 6 blocks 11th St. Project postponed. Noted Nov. 13.

Okla., Newkirk — Making preliminary plans concrete paving 10 blocks Cedar, Maple and Cherry Sts., 24 ft. $25,000. Engineer not selected. C. S. Miller, mayor.

Okla., Pauls Valley—Garvin Co. election Jan. 9, $600,000 bonds, grading and surfacing 100 mi. various roads. J. M. Page, Capitol Bldg., Oklahoma City, engr.

Okla., Pawhuska — Osage Co. made surveys grading, etc., 22 mi. Pawhuska-Burbank Rd., 165,000 cu.yd. earth and 17,300 cu.yd. rock excav., 1,880 cu.yd. concrete paving. $100,000. W. M. Clark, Pawhuska, engr.

Okla., Ralston—Plans grading and paving 4 blocks Main St., 50 ft., $25,000. V. Williams, Pawhuska, engr. Noted Dec. 4.

Okla., Wetumka—Making preliminary plans grading and vertical fibre brick paving, etc. 6,700 sq.yd. East Frisco Ave., $32,600. V. V. Long & Co., Colcord Bldg., Oklahoma City, engr.

Okla., Wewoka—Plans grading and vertical fibre brick surfacing 29,000 sq.yd. Apple, Cedar, Seminole, Walnut and other streets. V. V. Long & Co., 1300 Colcord Bldg., Oklahoma City, engrs.

Nev., Reno—Plans paving, curbing, etc., streets in 1st, 2nd, 3rd, 4th, 5th and 6th Wards. To exceed $25,000. H. Chism, engr.

Calif., Carmel—Plans improving 7th, 9th, 12th and North Lincoln Sts., and portions of 1st, 2nd and North Dolores Sts. To exceed $25,000.

Calif., El Monte — Plans 8 in. concrete paving portions Main St. To exceed $25,000. O. A. Gierlich, city engr.

Calif., Mill Valley—Plans grading and paving Cottage, Laurel, Blithdale and Parkside Aves. To exceed $25,000. J. C. Oglesby, town engr.

Calif., Ontario—Plans paving Sultana Ave. between 4th and Dessau Sts. $53,500.

Calif., Palo Alto — Plans repaving approximately 5 mi. various streets, incl. portions of University Ave. $215,000 or more. J. F. Bxybee, Jr., city engr.

Calif., Pomona—Plans paving West 5th St. To exceed $25,000. F. C. Froehde, city engr.

Calif., Richmond—Made plans improving Macdonald Ave. between 23rd St. and San Pedro Ave., 11,000 cu.yd. cut, 1,400 cu.yd. fill, 226,000 sq.ft. 2 in. National on 5 in. asphaltic concrete, 12,000 lin.ft. concrete curbing, 36,000 sq.ft. gutter, 65,000 sq.ft. cement walks, 100,000 sq.ft. 8 in. Richmond standard oil macadam. To exceed $110,000. E. A. Hoffman, city engr. Noted April 3.

Calif., Riverside — Riverside Co. made plans improving streets in vicinity of Palm Springs, 5,054 cu.yd. excav., 230,538 sq.ft. 5 in. paving, 55,956 sq.ft. resurfacing, 12,971 lin.ft. concrete curbing, etc. Davidson & Fulmor, 646 West 7th St., engr.

Calif., San Francisco—Made plans improving Orizaba St. between Randolph and Worcester Sts., 6,135 cu.yd. cut, 3,750 cu.yd. fill, 4,697 lin.ft. concrete curb, 6,474 sq.ft. art stone sidewalks, 1,365 lin.ft. 10 in. iron-stone pipe culvert, 111,760 sq.ft. asphaltic concrete paving, etc. $47,000. M. M. O'Shaughnessy, city engr.

Calif., San Francisco—Made plans grading, curbing, etc., Judah St. between 31st and 41st Aves. To exceed $100,000. M. M. O'Shaughnessy, city engr.

Calif., San Jose—Made plans improving Santa Clara St. between Market St. and city limits, 158,000 sq.ft. 2 in. Warrenite surface, 6,000 sq.ft. concrete gutter, 6,000 sq.ft. cement sidewalks, etc. W. Popp, city engr.

Calif., Santa Rosa—Sonoma Co. plans 2 in. Willite on 3 in. concrete surfacing Sebastopol-Guerneville Highway via Summer Park, $25,000; oil macadam surfacing approximately 12 mi. Sebastopol-Free-Stone Highway, $150,000. E. A. Peugh, co. surv.

Ont., Ottawa — Bd. Control takes bids early in 1925, asphalt paving, etc., Elgin St. from Argyle to Pretonia Aves. $30,000. A. F. Macallum, city engr.

Ont., Ottawa — Bd. Control takes bids early in 1925 asphalt surfacing, etc., St. Patrick St. $100,000. A. F. Macallum, city engr.

Ont., Toronto — Making plans concrete curbing Jersey Ave. and Page St. $261; asphalt paving Jersey Ave. and Page St. $3,198, Nelson St. $13,444, Lola Rd. $10,092, Manor Rd. $11,037; concrete paving lane first north of Bloor St. $11,392; concrete sidewalks on Bollrol St. $3,273, Lawrence Ave. $3,261; grading, etc., lane from Roxton Rd. to Ossington Ave. $8,500, Lawrence Ave. $8,083, lane from Uxbridge to Gillespie Aves. $10,100, Leeds St. extension $5,700. R. C. Harris, city engr.

BIDS DESIRED

Massachusetts—Dec. 30, by Dept. Pub. Wks., Div. Highways, State House, Boston, bituminous macadam paving 21,012 ft. main highway between Fitchburg and Westminster, in Fitchburg, Worcester Co. W. F. Williams, comr. Noted Dec. 18.

N. Y., Brooklyn—Dec. 29, by E. B. Riegelmann, boro pres., Boro Hall, grading, curbing and flagging Kings Highway from Flatbush Ave. to East 98th St.

N. Y., Long Island City—Dec. 20, by M. E. Connolly, pres. Queens Boro, Queens Subway Bldg., grading, erecting bulkheads, etc., portions Beach Channel Dr., etc.; grading, curbing, sidewalks, etc., on Wilbur Ave., Bragraw, Ivy, Proctor, 124th and 92nd Sts.; paving 92nd St.; grading, curbing, etc., 98th, 99th and 109th Sts.

N. Y., New York—Dec. 29, by H. Bruckner, pres. Bronx Boro., 3rd and Tremont Aves., granite block repaving Park Ave. E.

Pa., Butler—Jan. 2, by Comrs. Butler Co., bituminous macadam paving 6,600 lin. ft. Butler and Kittaning highway to connect East Butler, 20 ft. $50,000. Address County Engineer.

Georgia—Jan. 2, by State Hy. Dept., East Point, grading, etc., 10.122 mi. Columbus-Cussetta Rd., Federal Aid Project 404, Chattahoochie Co., 47.5 acres clearing and grubbing, 15,166 ft. timber gutter, 84,081 cu.yd. earth and 200 cu.yd. rock excav., 2,922 lb. reinforcing, etc. W. R. Neel, highway engr.

Louisiana—Jan. 13, by State Hy. Dept., Reymond Bldg., Baton Rouge, 3.59 mi. Federal Aid Project 103 A, Ouachita Parish, 18 ft., with 3 ft. gravel shoulders on each side; bids also for gravel for surfacing shoulders. W. B. Roberts, ch. engr.

La., Gretna — Jan. 28, by Police Jury Jefferson Parish, constructing 3½ mi. hard surfaced roads through Mryaitire Ridge and Shrewsbury section of parish. $60,000. F. T. Payne, Jefferson Bank Bldg., engr.

Ohio—Dec. 26, by Dept. of Highways & Pub. Wks., Columbus, grading, bridging and paving 1.485 mi. Sects. Cadiz and Q, Steubenville-Cambridge Rd., Harrison Co., bituminous macadam, asphalt or tar $56,107, concrete $61,203; improving Sect. A, Lebanon-Morrow Rd., Warren Co., gravel or limestone, $6,000 each. A. V. Donaheys, div. highways.

O., Fremont—Dec. 29, by Comrs. Sandusky Co., grading and waterbound macadam paving Oil Station Joint County Rd. $36,034. K. R. Richards, aud.

Wis., Wauwatosa—Grading and concrete paving 9,650 sq.yd. Cotterell and Grand Aves., to Jacobus & Winding Concrete Co., 1 State St., Wauwatosa, $25,281.

Kan., Eldorado—Jan. 10, by Clerk Butler Co., grading, etc., 7.144 mi. Federal Aid Project 239-A, B and C, 28 ft. H. D. Barnes, Eldorado, engr. Noted Dec. 11.

Kan., Emporia—Jan. 2 (extended date), by I. A. Laughlin, clk. Lyon Co., grading, etc., 8.967 mi. Federal Aid Project 260-B, 44,967 cu.yd. earth and 158 cu.yd. rock excav., 1,365 ft. hedge, 19,757 cu.yd. gravel surfacing, 43,388 lb. reinforcing, etc. W. S. Ruggles, Emporia, engr. Noted Nov. 20.

South Dakota—Dec. 30, by State Hy. Comr., Pierre, graveling 77.11 mi. in Brookings, Lake, Kingsbury, Minnehaha, Hughes and Hand Counties. F. D. Hudgins, ch. engr.

Tex., Carrizo Springs—Dimmitt Co. taking bids permanent paving 25 mi. Carrizo Springs-Maverick Co. line Rd. $250,000. J. G. Lott, co. engr.

Tex., Carrizo Springs—Jan. 6, by J. G. Lott, engr. Dimmitt Co., grading, surfacing and bridging 12.27 mi. State Highway 85, State Aid Project 483-C, $190,000; 11.69 mi. State Highway 85, State Aid Project 483-C, $160,000.

Tex., Sanderson — Jan. 6, by J. Stovall, engr. Terrell Co., caliche surfacing 25.07 mi. State Highway 12, Federal Aid Project 324-C, 18 ft. $250,000.

Okla., Fairfax—Jan. 5 (extended date), grading and paving 12 blocks Elm, Ash, Park, McKinley and 5th Sts., 26 ft. V. V. Long & Co., 1300 Colcord Bldg., Oklahoma City, engrs. Noted Dec. 18.

Calif., Huntington Park—Jan. 5, by Bd. City Trustees improving 3,000 ft. Santa Ana St., 1,855 cu.yd. excav., 116,927 sq.ft. 6 in. concrete paving. To exceed $25,000. P. E. Kressley, H. W. Hellman Bldg., Los Angeles, engr.

BIDS RECEIVED

New York—A. W. Brandt, comr. Highways, Albany, **(R. C. means Repair Contract, e. e. engrs. est. and Hy. Highway)**, constructing and reconstructing 4.92 mi. R. C. 1433-3110, Hy. 657, Croton River-Peekskill, Westchester Co., from Yonkers Contg. Co. Inc., Yonkers, $410,787 e. e. $476,326; 11.85 mi. Hy. 1698, 1696 and 8197, Albany and Greene Counties, from Belmar Contg. Co., Inc., Proctor Bldg., Troy, $555,556 e. e. $597,055; 0.52 mi. Hy. 5703, Penn State Line-Westfield, Part 1, Chautauqua Co., from J. B. Schultz, Buffalo, $29,541 e. e. $39,225; 0.36 mi. Hy. 5704, Blue Mountain Lake-Indian Lake, Parts 1 and 2, Hamilton Co., from Bricon Constr. Co. Inc., North River, $349,345 e. e. $407,[illegible]; 3.66 mi. Hy. 1680, Gifford Church-Gifford Corners, Schenectady Co., from J. W. Flynn, 141 Broad St., Waterford, $164,516 e. e. $189,664; 9.05 mi. Hy. 8[illegible] Seveys Corners-Colton, Part 2, St. Lawrence Co., from C. E. McCrodden, Inc., East 57th St., Brooklyn, $498,987 e. e. $447,165; 3.52 mi. Hy. 8202, Ridgway-Gaines, Part 3, Orleans Co., from J. M. Murray, Rochester, $184,409 e. e. $229,297; 3.16 mi. Hy. 1[illegible], Cold Spring-McKeel Corners, Putnam Co., from J. Arborio, 82 Church St., New Haven, Conn., $150,805 e. e. $169,407; 3.44 mi. R. C. 3109, Hy. 42, 415 and 5591, Orange Co., from J. L. Kehoe Constr. Co., Inc., Newburgh, $147,113 e. e. $177,841; 8.28 mi. Hy. 8201, Stamford-Summit, Parts 3, 3A and 4, Schoharie Co., from Lane Constr. Corp., 37 Colony St., Meriden, Conn., $390,620 e. e. $427,290; 0.44 mi. R. C. 1432, Hy. 20, White Plains-Armonk, Part 1, Westchester Co., from Fleming & Sheppard Co., Inc., 116 Broad St., New York City, $22,517 e. e. $26,957; 2.55 mi. R. C. 3111, Hy. 5370, Coxsackie-Ravena, Part 2, Greene Co., from Riteway Constr. Corp., New York City, $106,688 e. e. $127,778; 8.18 mi. Hy. 8200, Middleville-Little Falls, Parts 1 and 2, Herkimer Co., from Law Bros., Herkimer, $389,415 e. e. $413,528; 3.29 mi. R. C. 3108, Hy. 5264, Allegany-Vandalia, Cattaraugus Co., from F. Forness, Jr., 438 North Union St., Olean, $179,334 e. e. $209,586. Noted Dec. 4.

N. Y., Brooklyn—E. Riegelmann, boro. pres., Boro Hall, Dec. 17, granite repaving Sand St., from Garberry Block Corp., 45 South 9th St., $31,105, Schenectady Ave. from Greico Bros., 172 Russell St., $18,291; asphalt paving 65th St., from Brooklyn Alcatraz Asphalt Co., 409 Hamilton Ave., $41,760. Noted Dec. 11.

Ohio—Dept. Highways & Pub. Wks., Columbus, Dec. 12, grading, bridging and paving roads with **(a)** rein.-con. **(b)** brick **(c)** rein.-con. incl. stone **(d)** state stone **(e)** asphaltic macadam, incl. stone **(f)** tar macadam, incl. stone **(g)** tar state stone **(h)** tar macadam **(i)** concrete, incl. stone **(j)** asphaltic macadam **(k)** brick **(l)** state brick **(m)** concrete **(n)** sheet asphalt **(o)** Kentucky rock asphalt **(p)** bituminous macadam asphalt, **(1)** Sect. A, Cleveland-West Richfield Rd., Cuyahoga Co. **(2)** 6.602 mi. Sects. G-2 and D, Delaware-Newark Rd., Delaware Co. **(3)** 4.053 mi. Sects. E-2 and C, Defiance-Paulding Rd., Paulding Co. **(4)** 2.011 mi. Sects. J and Oakwood, Continental-Paulding Rd., Paulding Co. **(5)** 3.026 mi. Sect. N, Cincinnati-Zanesville Rd., Perry Co. **(6)** 3.131 mi. Sect. I, New Lexington-Logan Rd., Perry Co. **(7)** 3.131 mi. Sect. Shawnee, New Lexington-Logan Rd., Perry Co. **(8)** 3.131 mi. Sect. I, New Lexington-Athens Rd., Perry Co. **(9)** 0.831 mi. Sect. Bettsville, Lima-Sandusky Rd., Seneca Co. **(10)** 0.21 mi. Sect. Bettsville, Lima-Sandusky Rd., Seneca Co. **(11)** 2.87 mi. Sect. F, Upper Sandusky-Tiffin Rd., Seneca Co. **(12)** 2.209 mi. Sect. J, Fostoria-Carey Rd., Seneca Co. **(13)** 3.046 mi. Sect. L, Tiffin-Republic Rd., Seneca Co. **(14)** 2.509 mi. Sect. C-2, Painesville-Warren Rd., Trumbull Co. **(15)** 2.702 mi. Sect. D, Painesville-Warren Rd., Trumbull Co., graveling **(16)** 4.403 mi. Sect. C, Mt. Vernon-Coshocton Rd., Coshoeton Co., graveling and paving **(17)** 3.059 mi. Sect. L, Mt. Vernon-Coshocton Rd., Knox Co., widening **(18)** 2.506 mi. Sects. P, R and Hopedale, Cambridge-Steubenville Rd., Harrison Co., grading, etc., **(19)** 4.29 mi. Sects. P and Corning, New Lexington-Athens Rd., Perry Co., from W. Huber, Eaton, **(a1)** $252,650 **(b1)** $305,469; from G. S. Melert & Weidner, Medina, **(c2)** $177,997; from Lynn Constr. Co., Paulding, **(d2)** $178,423; from W. C. Moore, Marysville, **(e2)** $156,949; from Laubis Stone Co., Kenton, **(f2)** $167,286; from Kenton Constr. Co., Kenton, **(g2)** $112,692; from Erman & Seibel, Defiance, **(a3)** $111,804 **(i4)** $50,360; from Blauser & Shultz, Paulding, **(a3)** $110,059 **(b3)** $110,059; from P. B. Putman, Toledo, **(j4)** $44,976 **(h4)** $45,165; from J. I. Irwin, Galena, **(a5)** $99,697; from Holmes Constr. Co., Wooster, **(k5)** $129,623 **(a7)** $10,255 **(b7)** $129,623; from R. R. Heckman, Athens, **(k6)** $149,089; from W. F. Payne, 810 North Limestone St., Springfield, **(a6)** $125,165 **(b6)** $130,000; from O. M. Junk, Chillicothe, **(l7)** $96,000; from Stewart & Kiner, Maxahala, **(b8)** $25,597 **(l8)** $21,176; from Seneca Constr. Co., Kansas, **(m9)** $31,653 **(m10)** $4,329 **(l11)** $72,500 **(m11)** $73,697; from Hambarger & Wager Co., Sandusky, **(k11)** $84,000; from H. Candle, Bucyrus, **(e11)** $69,497; from F. F. Blausey, Woodfield, **(f11)** $70,405; from Modern Constr. Co., Fremont, **(m12)** $62,386; from D. C. Ingold, McComb, **(j12)** $48,591 **(o12)** $58,521; from W. H. and H. A. Sausley, Fostoria, **(p13)** $51,288; from V. Mango, Niles, **(h14)** $32,293 **(j14)** $32,293 **(h15)** $47,681 **(j15)** $47,681; from Bull-

Streets and Roads (Continued)

hart & Wright, Coshocton, **(16)** $61,162; from Gledhill & Sampler, Galion, **(*17)** $46,226 (e17) $52,238 **(f17)** $52,238; from McCleary & McGregory, West Lafayette, **(18)** $14,706; from Ebersbach Co., Pomeroy, **(19)** $127,635. Noted Dec. 4.

Mich., Detroit — From Detroit Asphalt Paving Co., 909 Free Press Bldg., grading and asphalt paving 2,790 sq.yd. Barlow Ave. $13,414, 2,560 sq.yd. Marlborough Ave. $12,581; from Cleveland Trinidad Paving Co., 402 Hammond Bldg., 1,080 sq. yd. Tyler Ave. $5,845; from Cooke Asphalt Paving Co., 1260 Penobscot Bldg., 8,600 sq. yd. Adeline Ave. $41,307; from Davis & Crowe, 400 Penobscot Bldg., 3,510 sq.yd. Montana Ave. $15,436. Noted Dec. 18.

Illinois — Dept. Pub. Hys. & Buildings, Div. Highways, Springfield, Dec. 17, concrete surfacing 8.54 mi. Route 1, Sects. C-1 and D-1, Iroquois Co., from Shanks & Gannon Constr. Co., Watseka, $165,172, 18.38 mi. Route 1, Sects. 2, 3, 28 and 29, White, Gallatin and Saline Counties, from Ransom & Sherwood, Palestine, $344,000, 24.84 mi. Route 1, Sects. 47 and 48, Vermilion Co., from Globe Constr. Co., Evansville, Ind., $270,564, 7.7 mi. Route 10, Sect. 35, Vermilion Co., from A. E. Dorsey, Terre Haute, Ind., $90,568, 24.33 mi. Route 4, Sects. 28, 29, 430 and 430-B, Will, DuPage and Cook Counties, incl. six 50 ft.: span concrete girder bridge, from R. F. Conway, 133 West Washington St., Chicago, $694,000, 12.79 mi. Route 5, Sects. 24, 25 and 26, Jo Daviess Co., from Schuster Constr. Co., Denmark, Wis., $257,464, 6.86 mi. Route 5, Sect. 28, Jo Daviess Co., from W. B. Moore, Waterloo, Ia., $168,911, 8.56 mi. Route 5, Sects. 29 and 30, from C. F. Scully Equipment Co., Dakota Bldg., St. Paul, Minn., $189,448, 5.64 mi. Route 8, Sects. 43 and 46, Knox Co., from H. Hays & Son, 209 La Salle St., Chicago, $118,000, 1.64 mi. Route 9, Sect. 9, Iroquois Co., from Divine Constr. Co., Watseka, $35,932, 11.79 mi. Route 13, Sects. 25 and 27, St. Clair Co., from Mautz & Oren, Effingham, $262,800, 6.96 mi. Route 16, Sect. 22, Macoupin and Montgomery Counties, from W. C. Johnson, Belleville, $146,315, 11.8 mi. Route 17, Sects. 28 and 29, Livingston and La Salle Counties, from W. D. Londigran Constr. Co., Streator, $217,000, 0.44 mi. Route 19, Sect. 27-W, McHenry Co., from McCarthy Impvt. Co., 802 Kahl Bldg., Davenport, Ia., $8,973, 6.14 mi. Route 27, Sect. 15, Carroll Co., from McCree & Co. and Stephens Bros., Merchants Natl. Bank Bldg., St. Paul, Minn., $145,547, 4.33 mi. Route 27, Sect. 17, Ogle Co., from C. E. Carson Co., 601 St. Clair St., Chicago, Ill., $94,069, 5.87 mi. Route 31, Sects. 16 and 17, Fulton Co., from Keokuk Quarry and Constr. Co., Keokuk, Ia., $130,000, 3.31 mi. Route 38, Sect. 2, Jersey Co., from Nelson Constr. Co., Jerseyville, $96,294, 29.19 mi. Route 41, Sects. 11, 12, 13 and 14, Fulton, McDonough and Knox Counties, from Cameron Joyce & Co., Keokuk, Ia., $513,102; grading 6.18 mi. Route 8, Sects. 42-A, 73,955 cu.yd. excav., from Beckman & Deicke, Lombard, $34,776, 3.89 mi. Route 7, Sect. 44-A, 133,000 cu.yd. excav., from D. C. Condin, St. Louis, Mo., $58,583, 3.11 mi. Route 8, Sect. 45-A, Knox Co., 27,780 cu.yd. excav., from Wisley & Sons, Sheffield, $17,518, 6.53 mi. Route 14, Sect. 10-A, Hamilton Co., 84,245 cu.yd. excav., from Gaines Bros. Co., Fairland, Okla., $47,702, 0.38 mi. Route 15, Sect. 14-A, Jefferson Co., 24,061 cu.yd. excav., from T. J. Craley & Son, Centralia, $6,951, 4.88 mi. Route 31, Sect. 15-A, Schuyler Co., 159,157 cu.yd. excav., from S. J. Groves & Sons, Montreal St. and Cleveland Ave., St. Paul, Minn., $98,274, 6 mi. Route 33, Sect. 3-A, Jasper & Crawford Counties, 83,855 cu.yd. excav., from Wells & Kleinfelter, $31,813, 17.86 mi. Route 40, Sect. 10-A and 11-A, Carroll and Jo Daviess Counties, 264,580 cu.yd. excav., from Winston Bros., Globe Bldg., Minneapolis, Minn., $162,892. Noted Dec. 4.

Tex., Alice—Jim Wells Co., grading and bridging 16.1 mi. State Highway 12, Federal Aid Project 429, 26 ft., and 14.42 mi. State Highway 12, Federal Aid Project 429-H, 26 ft., from Armstrong & Armstrong, Roswell, N. M., $93,389 and $61,350. Engrs. ests. $108,550 and $72,000 respectively. Noted Nov. 20.

Tex., Greenville—Hunt Co., reshaping old local stone base and laying 17,000 yd. waterbound macadam with inverted penetration top on 13 mi. Wolfe City Rd., 16 ft., from J. A. Block & Co., 209½ West 8th St., Ft. Worth, $73,055. Engrs. est. $75,000.

Tex., Jacksboro—Jack Co., grading, asphaltic macadam on sledged stone surfacing and bridging 17.38 mi. Decatur Rd., State Highway 39, 18 ft., from Haden & Austin, Sante Fé & Runnels St., Houston, $273, 350 engrs. est. $311,962; 2½ in. asphaltic macadam on sledged stone paving 16.68 mi. State Highway 25, Federal Aid Project 441-A, 18 ft., from Womack Constr. Co., Sherman, $179,860, engrs. est. $196,404.

Tex., Palestine—Anderson Co., grading and surfacing with local material, etc., 10.7 mi. Palestine-Tennessee Colony Rd., and 15 mi. Palestine-Rusk Rd., both 16 ft., from N. M. George Constr. Co., Duback, La., $58,483 and $64,787 respectively. Engrs. est. $60,000 and $70,000 respectively.

Calif., Bakersfield—Grading, 1.5 in. Warrenite on 3.5 in. asphaltic concrete paving, etc., portions of 24th St., from Union Paving Co., Call Bldg., San Francisco, $60,448.

Calif., Chico—City Trustees, grading, curbing and 5 in. asphaltic concrete paving, etc., 575,000 sq.yd. Normal Ave., etc., from Federal Constr. Co., Call Bldg., San Francisco, $117,735. Noted Dec. 4.

Calif., Los Angeles—Supervs. Los Angeles Co., Dec. 8, improving Rd. Dist. No. 254, Durfee Ave., 8,671 cu.yd. excav., 36,897 sq.yd. shape roadway, 35,767 sq.yd. concrete paving, 23,728 sq.yd. disintegrated granite sub-base, etc., from T. W. Oglesby, 423 Edgewood Ave., Los Angeles, $44,757. Noted Nov. 6.

Calif., Monterey—City Council improving Jeffersno St. between Main and Pacific Sts., etc., 90,000 sq.ft. 1.5 in. on 2.5 in. asphaltic concrete paving, etc., from Clark & Henery Constr. Co., Chancery Bldg., San Francisco, $32,615. Noted Dec. 11.

CONTRACTS AWARDED

New Hampshire—State Hy. Dept., Concord, bituminous macadam paving 0.9 mi. highway in Westmoreland, to Robie Constr. Co., Inc., 1037 Elm St., Manchester, $22,486. Engrs. est. $25,000. Noted Nov. 13.

Connecticut—State Hy. Dept., Hartford, 8 in. rein.-con., type B paving 11,935 ft. Prospect Hill Rd., in Enfield and East Windsor, to Lane Constr. Co., 37 Colony St., Meriden, $75,753, 14,790 ft. Portland East Hampton Rd., in East Hampton, to F. B. Miller, Norwich, $122,591; 7 in. waterbound macadam paving 8,760 ft. Harwinton Rd. in Torrington, to J. De Michael & Bros., 58 High St., Torrington, $44,792; 7 in. native stone macadam paving 19,810 ft. Union Turnpike in Stafford, to M. A. Gammino Constr. Co., 728 Valy St., Providence, R. I., $160,359; 8 in. waterbound macadam paving 8,750 ft. Sherman Rd. in New Fairfield, and 22,215 ft. Norwich-Hadlyme Rd., in Lyme and East Haddam, to J. Arborio, 82 Church St., New Haven, $56,745 and $139,318 respectively; 3 in. bituminous macadam on 7 in. native stone paving 12,650 ft. Glastonbury-Portand Turnpike in Portland, to A. Brazos & Sons, 66 Oak St., Middletown, $131,349; rein.-con. paving 7,744 ft. Sharon-Amenia Rd. in Sharon, to J. Mascetti, 223 Oak Ave., Torrington, $68,025; grading for 36 in. paving 34,600 ft. Boston Post Rd., in Milford, Orange and West Haven, to Connecticut Natl. Pavements, Inc., 173 Orange St., New Haven, $106,685; grading, etc., 5,458 ft. Boston Post Rd. in Greenwich, from Silliman & Godfrey Co., 133 Admiral St., Bridgeport, $115,490. Noted Dec. 18.

N. Y., New York — H. Bruckner, pres. Bronx Boro., 3rd and Tremont Aves., granite block repaving East 144th St., to P. Cramer, 114 East 52nd St., $17,261. Noted Dec. 18.

N. Y., New York—J. Miller, pres. Manhattan Boro., Municipal Bldg., grading Wadsworth Terrace and West 188th St., to M. DelBalso, 660 East 221 St., $30,016. Noted Dec. 18.

O., New Philadelphia—Tuscarawas Co. improving Div. 2 Baltic-Union Hill Rd., slag and limestone, to Holmes Constr. Co., Millersburg, $32,810. Engrs. est. $35,000. E. A. Stingel, New Philadelphia, engr.

Pa., Phila. — Bureau Hys. Dept. Pub. Wks., grading Champlost, 6th, Reedland and Wheeler Sts., to R. B. Wenner, 2313 Walnut St., $3,774; asphalt paving Moyamensing St., to Eastern Paving Co., 401 Colonial Trust Bldg., $26,523; improving 89th St., to Neely Bros. & Russell, Inc., Oxford and Wakeling Sts., $10,074; asphalt sand, to Union Paving Co., 30th and Locust Sts., $950; crushed pebbles, to Van Sciver Corp., Parkway at 24th St., $2,063; asphaltic cement, to Atlantic Refining Co., 260 Southern Blvd., $7,310.

W. Va., Winfield—Putnam Co. grading 6 mi. road from Buffalo and Mason Co. line, to J. E. Doyle, 432 8th Ave., Huntington, $25,000.

Mich., Detroit—To Detroit Asphalt Paving Co., 909 Free Press Bldg., sheet asphalt paving 4,090 sq.yd. Barnham Ave. $19,960, 4,200 sq.yd. Bessemore Ave. $20,805, 4,010 sq.yd. Washburn Ave. $18,099, 19,240 sq.yd. Wark Ave., Sect. 1 $85,928, 17,100 sq.yd. Audubon Ave. $84,540, 4,690 sq.yd. Georgia Ave., Sect. 2 $23,289, 10,480 sq.yd. Promenade Ave. $49,068; to Cleveland Trinidad Paving Co., 402 Hammond Bldg., 995 sq.yd. Wilson Ave. $5,239, 720 sq.yd. Dexter Ave., Sect. 2 $3,602, 6,410 sq.yd. Holmur Ave., Sect. 3 $30,935; to Cooke Asphalt Paving Co., 1260 Penobscot Bldg., 6,680 sq.yd. Orleans Ave. $30,830. Noted Dec. 18.

Ill., Galesburg—Grading, surfacing, etc. East Grove St., 2,725 sq.yd. vitr. brick, on 4 in. concrete, 1,703 ft. combined curb and gutter, 1,150 cu.yd. excav., to Graham Constr. Co., 550 South Cedar St., $10,565, engrs. est. $11,321, North Whitesboro St., 3,830 sq.yd. vertical fibre brick on 4 in. concrete, 2,525 ft. combineed curb and gutter, 1,700 cu.yd. excav., to H. H. Gunther, 600 East Main St., $14,716, engrs. est. $15,717.

Minnesota — State Hy. Dept., St. Paul, graveling 26 mi. Two Harbors-Beaver Bay Rd., State Highway 1, to D. H. Clough & Co., 405 Palladio Bldg., Duluth, $50,000. Noted Dec. 4.

Kan., Ft. Scott—Grading and bituminous macadam surfacing 5.979 mi. Federal Aid Project 271-A, and 7.165 mi. Federal Aid Project 270-A, Bourbon Co., to Hogan Constr. Co., Little Rock, Ark., $165,263 and $184,255 respectively. Engrs. est. $175,886 and $200,253 respectively. Noted Nov. 20.

Kan., Garnett — Anderson Co., grading and gravel surfacing Federal Aid Project 113-B, to Stevens Bros., St. Paul, Minn., $24,967. Engrs. est. $37,171. Noted Nov. 20.

Neb., Holdrege—To Roberts Constr. Co., 404 First Natl. Bank Bldg., Lincoln, improving streets in Dists. 9, 10, 11 and 12, 19,000 cu.yd. grading, 55,990 sq.yd. rein.-con. paving, 31,850 lin.ft. curbs and gutters, etc., $2.00 per sq.yd., also 6,435 ft. 12- to 30-in. vitr. clay sewers, 14 manholes, etc., $24,309.

Neb., Lincoln—Improving 40 blocks various streets in 5 districts, 56,000 sq.yd. concrete paving, 6,000 lin.ft. concrete curbing, 14,000 lin.ft. concrete guttering, 19,000 cu.yd. earth excav., also 6,000 ft. 12- to 39-in. vitr. clay sewers, etc. in various streets, to Roberts Constr. Co., 1st Natl. Bank, $140,000 and $14,360 respectively. Engrs. est. $140,000 and $22,000 respectively.

Arkansas—State Hy. Dept., Little Rock, grading, scarifying and Bates type concrete paving 3.98 mi. Arkansas-Missouri Highway, 18 ft., to Kelliher Constr. Co., Southern Trust Bldg., Little Rock, $108,385.

Tex., El Paso—Paving with permanent foundation and bitulithic topping Richmond and Para Sts., to El Paso Bitulithic Co., 160 North Piedras St., $2.12 per sq.yd. Engrs. est. $70,000.

Tex., El Paso—El Paso Co., hard surfacing 7.35 mi. State Highway 1, Kern Pl. Rd., to Orr & Wright, El Paso, $140,028. Noted Dec. 18.

Tex., El Paso—El Paso Co., widening and resurfacing 8 mi. Ysleta Rd. to Socorro, 18 ft., to El Paso Bitulithic Co., 160 North Piedras St. $78,336.

Tex., Houston — Harris Co., bitulithic paving Blodgett Ave., to Gulf Bitulithic Co., 801 Bankers Mortgage Bldg., $56,050, engrs. est. $60,000; rock asphalt paving Heiner and Sabine Sts., to Smith Bros., Inc., Amer. Exch. Bank Bldg., Dallas, $42,863, engrs. est. $45,000.

Tex., Paris—Lamar Co., concrete paving 4.12 mi. South Highway 39, and 5.23 mi. Westend Highway 5, to J. C. Field, Denison, $113,763 and $114,368 respectively. Noted Dec. 4.

Oklahoma—State Hy. Dept., Oklahoma City, grading, etc., 5.734 mi. Federal Aid Project 186, Pittsburg Co., 58,420 cu.yd. earth and 120 cu.yd. rock excav., to Pharoh Bros., Okemah, $20,319, engrs. est. $28,119; concrete surfacing 21,130 sq.yd. Federal Aid Project 120-D, Pittsburg Co., to Altman-Rogers Co., McAlester, $53,910, engrs. est. $56,311.

Okla., Alva—Grading, concrete paving, etc., 9,348 sq.yd. Dists. 7, 9 and 10, to Schultz & Schultz, Anthony, Kan., $22,446. Engrs. est. $26,386. Noted Oct. 9.

Calif., Blythe—City Trustees improving Hobson Way between Main St. and west city limits, 12,560 sq.ft. 6 in. concrete paving and grading, 14,955 sq.ft. concrete sidewalks, 14,056 sq.ft. gravel shoulders, etc., to Pearson & Dickerson, Riverside, $53,239. Engrs. est. $50,000. Noted Dec. 18.

Calif., Inglewood—To G. H. Oswald, 366 East 58th St., Los Angeles, improving Hillsdie Ave. and Hill St., 184,742 sq.ft. grading at $0.0345 per sq.ft., 5,970 lin.ft. concrete curb $0.55, 112,120 sq.ft. 4 in. Willite paving $0.22, etc., total $36,310. Noted Nov. 27.

Calif., Los Angeles—Improving Halldale and Lexington Aves., to Thomas & Chalmers, San Fernando Bldg., $10,951 and $17,014 respectively; oiling, rolling, curbing, sidewalks, etc., on Manhattan St., to H. R. Erdman, 141 West Main St., $3,563; Amethyst St., to D. J. Spahr, 3021 Del Monte Dr., $2,777.

Calif., Los Gatos T. Eastland Co., 484 California St., San Francisco, Durite paving, gas and water mains in private tract, to Raisch Impvt. Co., 46 Kearny St., San Francisco, approximately $100,000.

Calif., Lynwood—F. Welch, city clk., to Hall-Johnson Co., P. O. Box 355, improving Lynwood Blvd., 157,150 sq.ft. grading at $0.016 per sq.ft., 157,150 sq.ft. 4 in. oil macadam paving $0.12, 56,560 sq.ft. sidewalks $0.17, 13,770 lin.ft. curb, 24,825 sq.

Streets and Roads (Continued)

ft. gutters $0.28, total $40,829. Noted Dec. 18.

Calif., Santa Barbara—Paving De La Guerra St., 5 in. concrete with 1.5 in. asphaltic concrete surface, etc., to J. T. Cornwall, 343 Pleasant St., $45,156. Noted Oct. 2.

Buildings—Industrial

PROPOSED WORK

Me., Mount Desert—Repair and Service Garage—C. H. Milliken, c/o J. F. Kelly, archt., 39 Center St., New Haven, Conn., having plans prepared 1 and 2 story, 45 x 110 ft., rein.-con. repair and service garage. $50,000.

Vt., Rutland—Plant—Lincoln Iron Wks., plans rebuilding plant, recently destroyed by fire. $80,000-$90,000. Engineer and architect not selected.

Mass., Boston — Repair and Service Garage—Owner, c/o S. S. Levy, archt., 35 Court St., having plans prepared 1 story, 40 x 200 ft., rein.-con. and brick, Harrison Ave. $40,000.

Mass., Boston—Factory J. D. Marr, 384 Dorchester Ave., having plans prepared by E. N. Adams, 86 Everett St., Arlington, 2 story and basement, 100 x 200 ft., rein.-con., and brick, D St. and Old Colony Rd. $140,000.

Mass., Dorchester (Boston P. O.)—Repair and Service Garage—L. Altman, 119 Massachusetts Ave., having plans prepared by F. A. Norcross, 46 Cornhill Ave., Boston, 1 story, 110 x 115 ft., rein.-con. and brick, Blue Hill Ave. $50,000.

Mass., Newtonville (br. of Boston)—Repair and Service Garage—Central Garage, Inc., E. J. McDonald, treas., 77 Summer St., Boston, having plans prepared 1 story, 130 x 135 ft., rein.-con. and steel, Walnut Terrace, here. $60,000. Private plans.

Pa., Phila.—Manufacturing—H. Disston & Son, Inc., Wissiming and Unruh Sts., having preliminary plans prepared by W. Steele & Son, 219 North Broad St., 6 story and basement, rein.-con. manufacturing building.

Pa., Phila. — Manufacturing — Walworth Mfg. Co., 245 Arch St., having plans prepared by C. E. Wunder, 1520 Locust St., manufacturing building, Hunting Park Ave. near Fox St.

Pa., Williamsport—Plant—Williamsport Sun, West 4th and Hepburn Sts., G. E. Graff, pres. and genl. mgr., plans 3 story and basement, 44 x 95 ft., steel and concrete, West 4th St. $150,000.

O., Alliance — Factory — McCaskey Register Co., purchased 8 acre site and plans 2 story factory. $1,000,000.

O., Cleveland—Factory—Cleveland Structural Steel Co., 6600 Grand Ave., had plans prepared 1 story, 75x120 ft., steel and metal, Grand Ave. $40,000. Private plans.

O., Cleveland—Factory—Marquard Sash & Door Co., F. J. Marquard, mgr., 307 Canal Rd., having plans prepared 1 and 2 story, 85 x 285 ft., brick and steel, 14731 Lorain Ave. $150,000. Private plans.

Ind., Indianapolis — Manufacturing — E. Lilly & Co., 210 East McCarty St., having plans prepared by R. F. Daggett, Consolidated Bldg., 6 story and basement, 100 x 260 ft., rein.-con., brick and steel, McCarty St. $800,000.

Mich., Lincoln Park (Wyandotte P. O.)—Factory—Detroit Electric Stove Co., 3435 Piquette Ave., Detroit, making plans 3 story, 75 x 100 ft., rein.-con. and brick, plain foundation, Howard Blvd. $75,000. Private plans.

Wis., Hawkins — Cannery — Frame Canning Co., Ladysmith, plans 2 story, brick and timber, plain foundation. To exceed $40,000. Engineer and architect not selected.

Wis., Waupun—Factory—F. J. Stepnoski, archt., Forest Ave., Fond du Lac, takes bids about Dec. 23, for superstructure 2 story, 40 x 74 ft., brick and timber, North Water St., for Teeple Shoe Co., c/o N. M. Larson, mgr. $40,000. Noted Dec. 4.

Minn., St. Paul—Factory, etc.—Griggs, Cooper & Co., Bway. and 3rd St., plans 4 story and basement, 120 x 280 ft., rein.-con., brick, tile and stone factory and office building, Fairview and University Aves. $500,000.

Mo., St. Joseph—Factory—H. Ehrlich & Sons Mfg. Co., 20 South 17th St., having preliminary plans prepared by W. Siemens, St. Joseph, 2 and 3 story, 80 x 150 ft., brick and concrete, Lake and Colorado Sts.

Tex., Houston—Factory, etc.—J. Finger, archt., Keystone Bldg., soon takes bids 3 story, 100 x 250 ft., brick and timber factory and warehouse, plain foundation, Hamilton St., for H. B. Tennison, 427 Lovett Blvd. $100,000.

Tex., Lubbock — Plant — Texas Utilities Co., H. A. Allen, mgr., plans 50 ton ice freezing plant and extending entire plant, also will purchase 1,200 hp. Bush-Sulzer Bros. Diesel engine. Private plans.

Tex., McAllen—Power House—See "Buildings-Commercial."

Tex., San Antonio—Plant—T. B. Baker, c/o Gunter Hotel, plans cold storage plant, Medina St. $150,000. Engineer and architect not selected.

Tex., San Antonio—Plant—M. F. Postlewaite, c/o Southern Ice & Cold Storage Co., Frio and Durango Sts., plans ice plant, Medina St. $150,000. Engineer and architects not selected.

Mont., Sydney — Factory — Holly Sugar Corp., W. L. Lawson, genl. mgr., plans factory. $1,000,000.

Calif., Los Angeles—Factory—Owner, c/o H. Siskin (interested), 931 East Pico St., plans probably 3 story, rein.-con. on 600 x 1,000 ft. site, 9th St. Engineer and architect not selected.

Calif., Los Angeles — Factory — M. R. Gray Co., 812 South Los Angeles St., having plans prepared by Morgan, Walls and Clements, Van Nuys Bldg., 1 story, 91 x 173 ft., brick, Seward St.

Calif., Los Angeles—Laundry—Peerless Laundry Co., 5826 South Main St., having plans prepared by H. L. Pierce, Wright-Callendar Bldg., 3 story, 40 x 150 ft. brick addition, Main St. and Slausen Ave.

Calif., Los Angeles—Plant—Los Angeles Pressed Brick Co., Frost Bldg., having plans prepared by Morgan, Walls & Clements, Van Nuys Bldg., 3 story (ultimately 5 story) and basement, plant on 200 x 200 ft. site, Date St. near Macy St.

Calif., Los Angeles—Shop—Automobile Serv. & Cleaning Corp., Rector Hotel, had plans prepared 1 story, 35 x 145 ft., brick, and 1 story, 20 x 44 ft., timber shop buildings, Sunset Ave. Private plans.

Calif., Oakland—Plant—California Compressed Gas Co., 71 Steuart St., San Francisco, plans (1st unit) corrugated iron and steel plant, Wood St.

Calif., Salinas — Plant — California Sea Products Co., Salinas, plans fertilizer plant, Moss Landing. To exceed $40,000.

Calif., Santa Cruz — Shops — Supervs. Santa Cruz Co. purchased site and plans shops to repair road equipment, Eagle St. L. Bowman, co. surv.

Calif., Wilmington—Plant—Latin-Amer. Fruit & Steamship Corp., 1215 Hibernian Bldg., Los Angeles, plans pre-cooling plant, and conveyor system, here. To exceed $150,000.

Que., Sillery—Mill—Quebec Paper Co., Ltd., 71 St. Peter St., Quebec, plans pulp and paper mills, here. $2,000,000. F. W. Clarke, pres.

Que., Three Rivers—Plant—St. Lawrence Paper Co. Ltd., Three Rivers, plans extending plant, and installing 2 new paper machines, $3,000,000. H. O. White, engr.

Que., Thurso—Plant—Singer Mfg. Co., St. Johns, plans plant, here.

Ont., London—Factory—Greers Carriage Co., York and Talbot Sts., plans rebuilding factory, recently destroyed by fire. $150,000. A. B. Greer, pres. and genl. mgr.

Ont., Sarnia—Station—Hydro Electric Power Comn., 190 University Ave., Toronto, purchased site and plans concrete, brick and steel transformer and distribution station. $50,000-$100,000. F. A. Gaby, ch. engr.

BIDS DESIRED

Mass., East Boston (Boston P. O.)—Repair and Service Garage — B. Mullen, 27 Central Sq., taking bids 1 story, 110 x 115 ft., rein.-con. and brick, Bennington and Saratoga Sts. $50,000. F. A. Norcross, 46 Cornhill St., Boston, archt.

Mass., Woburn — Repair and Service Garage—Woburn Degreasing Co., taking bids 1 story, rein.-con. and brick, Bedford St. $40,000. Private plans.

Ga., Atlanta—Bakery—Dec. 29, by McCormick Co., engrs., 121 South Nigley St., Pittsburgh, Pa., and 41 Park Row, New York City, 2 story and basement, 167 x 297 ft. rein.-con., brick and steel, sheet piling foundation, here, for Stone Baking Co. $350,000.

Wash., Tacoma—Sub-Station—Dec. 29, by Commissioner Light & Water, 3 story, 80 x 135 ft., rein.-con., plain foundation, for the Lake Cushman hydro-electric project, North 21st and Adams Sts. $150,000. J. L. Stannard, 1115 South 4th St., engr.

CONTRACTS AWARDED

Mass., Boston—Shipping and Storage—Chemsford Co., 117 Heath St., Roxbury, 1 and 2 story, 60 x 100 ft., 30 x 100 ft., and 20 x 40 ft., brick additions, to M. A. McPherson, 52 Rutledge Rd., Hyde Park. Archts. est. $50,000.

Mass., Forest Hills (Boston P. O.)—Repair and Service Garage—P. J. Brady, 3722 Washington St., Jamaica Plain, 1 story, 45 x 125 ft., brick and cast stone, Washington and Tower Sts., here, to N. Fritz Constr. Co., 62 Maywood St., Roxbury. Archts. est. $50,000.

Mass., Tully—Power House, etc.—F. C. Warrick & Co., Tully, 2 story, 36 x 40 ft., brick and steel power house and factory, to Taylor Wheeler Corp., Starr[illegible] Bldg., Athol. Engrs. est. $55,000.

Conn., Oakville—Plant—Autotype Co., 4 story, 60 x 100 ft., rein.-con., brick and steel addition, to Tracy Bros. Co., 32 Kenedict St., Waterbury. Noted Dec. 11.

Pa., Allentown—Mill—Majestic Silk Mills, 2 story and basement, 66 x 213 ft., brick and steel addition, plain foundation, Allen and Pioneer Sts., to Butz & Clodfelter Amer. Bldg. Noted Nov. 13.

N. C., Shelby—Mill—Ora Mills, main building 1 story, 138 x 335 ft., concrete, brick and steel, etc., to W. M. Welch, Inc., Greenville, S. C. Arrangements have been made for future extension, to house 6,000 additional spindles.

O., Cleveland—Cupalo—Grabler Mfg. Co., W. S. Bayer, secy., 6565 Bway., 1 story, brick and steel, Bway., to Bolton-Pratt Constr. Co., 7113 Euclid Ave. Archts. est. $40,000. Noted Dec. 18.

O., Cleveland—Factory—De Zort Radiator Co., 10007 Quincy Ave., Cleveland, 1 story, 40 x 60 ft., brick and steel, to L. W. Lapp, 2020 Brunswick Rd. Archts. est. $40,000.

O., Cleveland — Generating Station — Cleveland Electric Illuminating Co., c/o J. Wolf, Illuminating Bldg., structural steel for 1 story, 283 x 315 ft., brick, steel and concrete, Avon Beach, to Amer. Bridge Co., 30 Church St., New York City. Engrs. est. $10,000,000.

O., Cleveland—Shop, etc.—Ajax Mfg. Co., A. D. Hemen, mgr., 3830 Lakeside Ave., 1 story 129 x 364 ft. machine shop, 2 story 25 x 100 ft. office building, 60 x 200 ft. pattern storage, 60 x 60 ft. pattern shop, 40 x 72 ft. boiler house, brick, steel and concrete, Chardon Rd., and New York, Chicago and St. Louis, R.R. tracks, to H. K. Ferguson Co., 4900 Euclid Ave. Archts. est. $300,000.

Ind., Indianapolis—Factory—Lilly Varnish Co., 670 South California St., 4 story and basement, 42 x 82 ft., rein.-con. and brick, California St., to W. P. Jungelaus Co., Massachusetts Ave. Archts. est. $160,000.

Mich., Detroit—Bakery—Tri-State Bakery Co., c/o McCormick Co., archts., 121 South Negley St., Pittsburgh, Pa., 1 story and basement, 180 x 190 ft., and 2 story and basement, 60 x 138 ft. brick and steel, plain foundation, Martin and Pittsburgh Sts., to A. A. Albrecht Co., 1130 Penobscot Bldg., $160,000.

Mich., Detroit—Bakery—Ward Baking Co,. 2011 Baker St., constructing 149 x 446 ft., rein.-con. and steel. Toledo Ave. and Boulevard, to Everett Winters Co., 1024 Book Bldg., $500,000.

Mich., Detroit—Shop—Pittelkow Heating & Eng. Co., 312 West Larned St., 2 story, 70 x 80 ft. shop, to Everett Winters Co., 1024 Book Bldg., $50,000.

Mich., Kalamazoo—Plant—Booth Publishing Co., Kalamazoo, 2 story and part basement, 145 x 159 ft., rein.-con., brick, steel and stone, plain foundation, East Lovell and Burdick Sts., to H. L. Vanderhorst Co., Kalamazoo. Archts. est. about $200,000. Noted Nov. 27.

Wis., Milwaukee—Plant—Natl. Engraving Co., 396 National Ave., 2 story and basemen,t 52 x 70 ft., brick and timber, plain foundation, 6 Ave., to Meredith Bros., 253 Washington St. Archts. est. $40,000.

Wis., Sparta—Cannery—Sparta Canning Co., Sparta, 2 story, 62 x 300 ft., brick, tile and concrete, plain foundation, to Bekken & Nelson, Sparta. Archts. est. $100,000. Noted Oct. 9.

Wis., Wausau—Factory—Menasha Printing & Carton Co., River St., Menasha, 1 story, 62 x 300 ft. addition, plain foundation, Young St., here, to W. G. Hall, 105 Edwards St.

Mo., Kansas City—Factory—Kansas City Macaroni Co., 562 Campbell St., macaroni factory, to Patti-Moore Constr. Co., 411 Jenkins Bldg. Archts. est. $140,000.

Mo., St. Louis — Shops, etc. — Skouras Brothers Enterprise, Grand Central Bldg., having preliminary plans prepared by P. J. Bradshaw, International Life Bldg., eleven 1 story retail shops, 6 on Delmar Blvd. and 5 in Taylor Ave. with ornate entrance for airdome at intersection. $200,000.

Okla., Shawnee—Shops—Chicago, Rock Island & Pacific R.R. Co., 179 West Jackson Blvd., Chicago, Ill., 1 and 2 story, 14 x 241 ft. and 1 and 2 story 124 x 160 ft. brick and concrete shops, here, to J. T. Nelson & Sons, 3240 South Michigan Ave., Chicago, Ill., $120,000. Noted Aug. 7.

Calif., Azusa—Factory—Paramount Motors Corp., brick factory, to Walker Eng. & Constr. Co., 714 South Hill St., Los Angeles, $100,000 or more. Noted Jan. 10.

Calif., El Centro—Plant—Delno Ice Co., 1 story, 60 x 100 ft., steel and concrete, to Union Iron Wks., 5125 Santa Fe St., Los Angeles, approximately $45,000.

Calif., Los Angeles—Factory—Pioneer Paper Co., 55th and Alameda Sts., 2 story,

Buildings—Industrial (Continued)

40 x 140 ft., concrete and brick annex, to V. P. Gilbert, Citizens Natl. Bank Bldg.

Calif., Oakland — Factory — California Towel Co., 976 28th St., 2 story, rein.-con. factory, to Barrett & Hilp, 918 Harrison St., San Francisco, $42,000. Noted Dec. 18.

Calif., Pomona — Laundry — Southern Serv. Co., Palomares and Commercial Sts., 1 and 2 story, 95 x 185 ft., brick and steel, to W. E. Bartlett, Pomona.

Calif., Sacramento—Plant—I. F. Stark, archt., Oschner Bldg., (1st unit) 1 story, rein.-con., 15th and R Sts., to W. Keating, Forum Bldg., for Perfection Bread Co., $25,000. Noted Dec. 11.

S. A., Colombia, Bogota — Slaughter House—See "Buildings—Commercial."

Buildings—Commercial

PROPOSED WORK

Me., Bangor—School—St. Johns Roman Catholic Church, having sketches made by O'Connell & Shaw, 135 Newbury St., Boston, Mass., 3 story and basement, York St. To exceed $150,000.

Me., Hallowell—Infirmary—State Building Comn., c/o H. S. Coombs, archt., 11 Lisbon St., Lewiston, plans 2 story and basement, brick infirmary, here. $150,000.

Mass., Boston—Apartment—W. London, 1144 Commonwealth Ave., having plans prepared by S. S. Eisenberg, 46 Cornhill St., 3 story and basement, 85 x 150 ft., brick, 1750 Commonwealth Ave., $250,000.

Mass., Boston—Store—Kakas Bros., Inc., 72 Chauncy St., having plans prepared by Kilham, Hopkins & Greeley, 9 Park St., remodeling 4 story and basement store, 93-95 Newbury St. $150,000.

Mass., Boston—Theatre, Store and Office—Cobb Theatre, c/o A. J. Carpenter, Jr., archt., 1 Moss Hill Rd., Jamaica Plain, having plans prepared 2 story, 55 x 125 ft., brick, plain foundation, Washington and Cobb Sts. $150,000.

Mass., Bridgewater—School—Dept. Educ., State House, Boston, G. H. Varney, business agt., plans rebuilding State Normal School, 2 large buildings to replace 3, destroyed by fire. $750,000-$1,000,000. Engineer and architect not selected.

Mass., Brighton (Boston P. O.)—Apartment—Wolfson & Rutstein, 22 Congress Ave., Chelsea, having plans prepared by M. E. Levy, 7 Water St., Boston, 3 story and basement, Kilsyth and Lanark Rds., here. $150,000.

Mass., North Attleboro—High School—School Com. having preliminary plans prepared by H. B. S. Prescott, 12 Pearl St., Boston, 2 story and basement, brick and stone addition, $150,000.

Mass., Medford—High School—City plans Junior High School in East End Dist. To exceed $150,000. M. F. Brooks, supt. Engineer and architect not selected.

Mass., Rosindale—Church, etc.—Church of Our Savior, South St., raising $150,000 funds for 1 and 2 story church and Parish House, South St. Private plans.

Mass., Roxbury (Boston P. O.)—Apartment—Association, c/o S. F. Sutherland & Co., archts., 77 Summer St., had sketches made apartment, Temple St., here. $250,000.

Mass., Somerville—Bank—Somerville Institute for Savings, N. E. Reed, pres., 84 Bway., plans altering bank. T. M. James Co., 3 Park St., Boston, archts.

N. Y., New York—Apartment—W. Glassgold, Inc., c/o G. G. Miller, archt. and engr., 1482 Bway., having plans prepared 6 story, 90 x 100 ft., brick, steel and stone, plain foundation, 139th St. near St. Anns Ave. $175,000.

N. Y., New York—Office—One Park Ave. Corp., c/o York & Sawyer, archts., 50 East 41st St., having plans prepared 18 story, 197 x 205 ft., brick, steel and stone, plain foundation, Park Ave. between 32nd and 33rd St. $300,000.

N. J., Atlantic City—Hotel—N. J. Collins, c/o W. M. Stanton, archt., 1524 Chestnut St., Phila., Pa., having plans prepared 300 room hotel, Penna. Ave. and Boardwalk, here.

Pa., Butler—Exchange—Peoples Telephone Co. having plans prepared by C. P. Hitchens, 421 Wood St., Pittsburgh, and soon takes bids 2 story and basement, 80 x 110 ft., Washington St. $180,000.

Pa., Phila.—Apartment—W. Penn Apartment Corp., c/o Lippincott & Schaef, archts., 10 South 16th St., having plans prepared 5 story and basement, 49 x 140 ft., brick and steel, plain foundation.

Ga., Decatur—Gymnasium—Agnes Scott College, plans gymnasium, incl. swimming pools, assembly halls, etc. $150,000. N. Buchannan, secy.

La., New Orleans—Market—City having plans prepared by O. P. Mohr, city engr., City Hall, improving and altering 20 market buildings. $200,000.

Miss., Clarksdale—Station—Illinois Central R.R. Co., 135 East 11th Pl., Chicago, plans 1 story, 50 x 300 ft., brick and stone station, here. $200,000. E. H. Egan, Memphis, Tenn., gen. supt. of div.

Tenn., Bristol — Administration, etc. — King's College, Bristol, plans administration, library and 2 dormitory buildings. T. Scherer, pres.

Tenn., Nashville — Industrial College — Agricultural & Industrial State Normal School, plans science and library building, $150,000, dormitory $100,000, training school $30,000, and teachers college $50,000. P. L. Harned, comr. Educ.

O., Cincinnati — Church — Bethlehem Methodist Episcopal Church, Fairfax Ave., having plans prepared by Garber & Woodward, 2803 Union Central Bldg., 2 story and basement, 150 x 200 ft., rein.-con. and stone, Woodburn St. $150,000.

O., Cleveland—Commercial and Apartment—Syndicate, c/o J. Laronge Co., 600 Union Trust Bldg., plans brick commercial and apartment building, East 96th and Carnegie Ave. $150,000. Engineer's and architect's names withheld.

O., Cleveland—Commercial and Loft—Syndicate, c/o M. S. Koblitz, 424 Leader-News Bldg., having plans prepared by D. W. Harris, Discount Bldg., 4 story and basement, brick, steel and concrete, 1102 Superior Ave. $300,000.

O., Cleveland—Police Station—City, W. R. Hopkins, city mgr., having plans prepared by H. Kregelius, City Hall, 4 story and basement, 56 x 208 ft., brick, steel and concrete, Payne Ave. $750,000. Noted July 17.

O., Columbus—Motor and Terminal—Columbus Union Motor Bus Terminal Co., 44 East Rich St., having sketches made 100 x 187½ ft., brick and concrete, East Rich St. $250,000. Engineer and architect not selected.

O., Dayton—Fraternal—Fraternal Order of Eagles, South Main St., having plans prepared by Gebhart & Shaeffer, 507 Keith Bldg., 2 story, 80 x 160 ft., rein.-con. and brick, plain foundation, South Main St. $200,000.

O., Euclid—Church, etc.—Holy Cross Roman Catholic Church, T. A. Kirby, 2266 South Overlook Rd., Cleveland Heights, pastor, plans 2 story and basement, brick, steel and concrete church, school, parish house and home, East 200th St. $300,000. Engineer and architect not selected.

O., East Cleveland (Cleveland P. O.)—Apartment—H. H. Figler, 1605 Belmar Rd., had plans prepared by Braverman & Havermaet, Ulmer Bldg., 3 story and basement, 81 x 95 ft., brick and timber, East 133rd St. $150,000.

O., South Euclid—High School—Bd. Educ., P. Prasse, having plans prepared by A. M. Allen Co., 7016 Euclid Ave., Cleveland, 2 story and basement, brick steel and concrete high school. $400,000. Noted Nov. 20.

O., Steubenville—School—Bd. Educ., A. M. Lyons, pres., having plans prepared by Peterson & Clark, Steubenville, Grade and Junior High School, 2 story and basement, brick, steel and concrete, 4th St. and South Ave. $400,000.

O., Warren — Bank and Office — Union Savings & Trust Co., R. A. Cobb, having plans prepared by Keich, O'Brien & Hosker, 9 story and basement, 54 x 100 ft., brick, steel and concrete. $500,000.

Ind., Gary—Hotel—C. Dorman, 320 West 5th St., having plans prepared by J. H. Wildermuth, 673 Bway., 5 story and basement, 50 x 126 ft., rein.-con., brick and steel, 5th St. $250,000.

Ind., Indianapolis — Business — A. E. Metzger, Fletcher Savings & Trust Co., having plans prepared by Rubush & Hunter, Amer. Central Life Bldg., 2 story and basement, 110 x 230 ft., rein.-con., brick and steel, North Meridian St. $150,000.

Ind., Indianapolis—Office—L. Strauss & Co., 33 West Washington St., having plans prepared by Rubush & Hunter, Amer. Central Life Bldg., 11 story and basement, rein.-con., brick and steel, North Illinois St.

Ind., Wabash — High School — Voted $200,000 bonds, 2 story and basement, brick high school, North Miami St.

Mich., Detroit—Apartment—J. Kasurin, archt., 502 Empire Bldg., preparing plans 4 story and basement, 116 x 245 ft., rein.-con., brick and steel, plain foundation. $400,000. Owners name withheld.

Mich., Detroit—Apartment and Store—Weston & Ellington, archts., Stroh Bldg., preparing plans 11 story and basement, 100 x 150 ft., brick and steel, plain foundation. $800,000. Owners name withheld.

Mich., Detroit — Hotel—T. C. Hughes, archt., 8049 Wilson Ave., preparing plans 4 story and basement, 75 x 100 ft. brick, steel and stone, plain foundation, 2nd Blvd. and Peterboro St. Owners name withheld.

Mich., Detroit—Library—Pub. Library Comn. having plans prepared by Smith, Hinchman & Grylls, 800 Marquette Bldg., 2 story and basement, 75 x 100 ft. rein.-con., brick and steel, plain foundation, Kercheval and Eastlawn Aves. $150,000.

Mich., Highland Park (Detroit P. O.) — School—Bd. Educ. having plans prepared by M. R. Burrowes, 3633 Cass Ave., Detroit, 3 story and basement, rein.-con., brick and steel, plain foundation. $400,000.

Mich., Springwells — School — Bd. Educ. having plans prepared by H. J. Keough, 3440 Cass Ave., Detroit, 2 story and basement, rein.-con., brick and steel, plain foundation, on Miller School Site. $2,000,000.

Ill., Berwin—Theatre, Office and Store—Biba Bros., take bids about Jan. 5, 3 story and basement, 125 x 140 ft., rein.-con., brick and stone, Roosevelt and Cuyler Aves. $300,000. Hooper & Janusch, Inc., 879 North State St., Chicago, archts.

Ill., Berwyn—Theatre—V. T. Lynch, 4100 West North Ave., Chicago, having plans prepared by Hooper & Janusch, archts. and engrs., 879 North State St., Chicago, 3 story and basement, 125 x 165 ft., brick and stone, plain foundation, Roosevelt Rd. and Cuyles Ave., here. $500,000.

Ill., Calumet City—High School—Bd. Educ., M. Finnman, secy., having plans prepared by Berry, Wainwright & Co., Hammond, Ind., and takes bids in spring, 2 story and basement, 100 x 130 ft., brick and stone, plain foundation. $200,000.

Ill., Chicago—Chapel—University of Chicago, 230 South Clark St., having plans prepared by B. Goodhue, 2 West 47th St., New York City, 1 story and basement, 92 x 200 ft., rein.-con. and stone, on campus. $1,000,000.

Ill., Chicago—Hotel—Holabird & Roche, archts., 104 South Michigan Ave., soon take bids 25 story, basement and sub-basement, 660 x 660 ft., rein.-con., brick and steel, caisson foundation, Michigan Ave. between 7th and 8th Sts., for Stevens Hotel Co. $20,000,000.

Ill., Chicago—Hospital—St. Vincents Infant Hospital, 721 North La Salle St. having sketches made by Holibird & Roche, 104 South Michigan Ave., rein.-con. and brick addition, plain foundation, 735 North La Salle St. $300,000.

Ill., Chicago—Office, etc.—L. A. Bensinger & Son, 73 West Monroe St., having plans prepared by A. Aischuler, 28 East Jackson Blvd., 5 story and basement, 144 x 165 ft., rein.-con., brick and terra cotta, plain foundation, Wabash and Congress Sts. $600,000.

Ill., Chicago—Office and Warehouse—Hibbard, Spencer, Bartlett & Co., 30 North State St., having plans prepared by Graham, Anderson, Probst & White, 80 East Jackson Blvd., 14 story and basement, 172 x 423 ft., rein.-con. and brick, caisson foundation, East Water St. $4,000,000.

Ill., Chicago—Schools—Bd. Educ., c/o J. Byrnes, business mgr. 650 South Clark St., having plans prepared by T. E. Christensen, 650 Clark St., takes bids about Feb. 4, two 2 story and basement, rein.-con., brick and stone, plain foundations, one on LeMoyne and LeClair St., and other 114th and Stewart Sts. $550,000 each.

Ill., Chicago—Schools—Bd. Educ., 650 South Clark St., soon takes bids 2 story and basement, rein.-con., brick and stone, 48th and Karlov St., $550,000; 2 story and basement, rein.-con. and stone, 70th St. and Merrill Ave., J. C. Christensen, 650 South Clark St., archt. and 3 story and basement, rein.-con., brick and stone, 60th and Rockwell Sts. $300,000, $550,500.

Ill., Oak Park—Apartment—T. Munn, 111 West Washington St., Chicago, had plans prepared by W. H. Pruyn, Jr., 122 South Michigan Ave., Chicago, 3 story and basement, 90 x 167 ft., brick and stone, plain foundation, Garfield and Euclid Sts., here. $150,000.

Wis., Cudahy—High School—Bd. Educ., F. Schade, pres., having plans prepared by R. Messmer & Bro., 221 Grand Ave., Milwaukee, 3 story and basement, brick and tile, plain foundation. $300,000. Noted Oct. 23.

Wis., Milwaukee—Hotel—Hotel Astor Co., Juneau Ave. and Marshall St., having preliminary plans prepared by M. Tullgren & Sons, 425 East Water St., 4 or 5 story and basement, brick and concrete addition, plain foundation, Juneau Ave. $200,000.

Wis., Milwaukee—Theatre and Business—J. Goldman, 510 Mitchell St., plans 2 story and basement, 82 x 150 ft., brick and concrete, plain foundation, Atwater Rd. $250,000. Private plans.

Wis., Milwaukee—Warehouse—M. Tullgren & Sons, archts. and engrs., 425 East Water St., preparing preliminary plans 8 story and basement, 200 x 200 x 575 ft., rein.-con. and brick, plain foundation, West Water St. $1,500,000. Owner's name withheld.

Ia., Marshalltown—Hospital—Deaconess Hospital, c/o K. Rest, having plans prepared by H. E. Reimer, Kibby Bldg., 4 story and basement, 45 x 180 ft., rein.-con. and brick. $250,000.

Buildings—Commercial (Continued)

Ia., Paullina—School—Election Dec. 27, $150,000 bonds for school.

Minn., Minneapolis—Club—Woman's Club of Minneapolis, 1526 Harmon Pl., plans 3 or 4 story and basement, rein.-con., brick and stone, Oak Grove and 15th Sts. $225,000. C. A. Prosser, 816 Superior Blvd., pres. Engineer and architect not announced.

Minn., St. Paul—Office—See "Buildings—Industrial."

Minn., White Bear (White Bear Lake P. O.)—Church—St. Mary's Roman Catholic Church having plans prepared by Sund & Dunham, 512 Essex Bldg., Minneapolis, 2 story and basement, 60 x 120 ft., rein.-con., brick nad stone. $150,000.

Kan., Atchison—Hotel—Chamber of Commerce, Masonic Temple, making preliminary plans 5 or 6 story, rein.-con. and stone hotel. $300,000 or more. Engineer and architect not selected. R. T. Willette, 701 North 2nd St., mgr.

Kan., Kansas City—Court House—Wyandotte Co. having plans prepared by Wight & Wight, 400 1st Natl. Bank Bldg., Kansas City, Mo., 5 story and basement, 134 x 222 ft., stone court house. $1,000,000. Noted April 17.

Kan., Manhattan—Library—Kansas State Agricultural College making preliminary plans 3 story and basement, rein.-con., brick and stone, on campus. $300,000. Private plans.

Neb., Lincoln—Clubhouse, etc.—Nebraska State Bd. Agriculture. E. R. Danielson, secy., asked for $200,000 appropriation for 2 and 1 story clubhouse and horse barn, State Fairgrounds. Private plans.

Neb., Omaha—Church—New Central United Presbyterian Congregation, c/o C. W. Steinbaugh, archt., 662 Brandeis Theatre Bldg., having preliminary plans prepared church, 55th and Leavenworth Sts. $150,000.

Mo., Kansas City — Hotel — Quality Builders, Inc., 1517 Commerce Bldg., had plans prepared by N. E. Peters, c/o owners, 8 story and basement, 110 x 170 ft. hotel. $1,200,000.

Mo., St. Louis—Apartment—F. J. Cornwall, 111 North 7th St., making preliminary plans 3 story and basement, 50 x 300 ft., rein.-con. and brick, 39th and Magnolia Sts. $175,000. Private plans.

Mo., St. Louis—Home—Womens Christian Home, 1814 Washington Ave., plans 134 x 180 ft., rein.-con., brick and stone, Locust and Beaumont Sts., $350,000. Private plans.

Mo., St. Louis—Theatre, etc.—J. F. McDermott, Central Natl. Bank Bldg., making preliminary plans 3 story and basement, 80 x 190 ft., rein.-con., brick, stone and terra cotta theatre, store and office building, Hodiamont and Gambleton Aves. Private plans.

Ark., Eldorado—Court House and Jail—Union Co. plans new court house and jail. $300,000. G. S. Tatum, co. judge.

Tex., Galveston—Hotel—G. K. Jorgensen, Palace Bath House, Galveston Beach, having plans prepared by W. S. Murdock, 506 Amer. Natl. Insurance Bldg., 11 story, 200 x 200 ft., rein.-con., steel and brick, 23rd St. and Boulevard. $1,500,000.

Tex., Houston—Auditorium—Voted $300,000 bonds, remodeling and constructing addition to new auditorium, Main St. A. C. Finn, Bankers Mortgage Bldg., archt. Noted Nov. 13.

Tex., Laredo—Hotel—M. Little having plans prepared by L. Walling, Austin, 10 story and basement, rein.-con. and brick, Old Hamilton site. $400,000. Noted Dec. 4.

Tex., San Antonio—Office—F. L. Thompson, pres. Greybury Oil Co., having preliminary plans prepared 10 story and basement, brick, stone and rein.-con., Houston St. and Bway. $700,000.

Tex., Temple—Hospital—Gulf Colorado & Santa Fe Ry., Temple, having plans prepared rein.-con. brick and stone annex, plain foundation. $150,000. Private plans.

Okla., Oklahoma City—Furniture Store—Harbonr-Longmire Co., 311 West Main St., had preliminary plans prepared 8 story and basement, 75 x 140 ft., rein.-con., plain foundation, 418-422 West Main St. $350,000. Engineer and architect not selected.

Okla., Tecumseh—Court House—Pottawatomie Co. making preliminary plans 2 story and basement, 90 x 140 ft., rein.-con., brick and steel, plain foundation, Main St. $175,000. Engineer and architect not selected.

Okla., Wetumka — Warehouse — Phillips Petroleum Co., Bartlesville, had plans prepared by A. H. Riney, Bartlesville, 1 story, 120 x 180 ft., steel, plain foundation, Canadian St. $160,000.

Wash., Walla Walla—Hospital—C. Lambert, Whitehouse & Price, archts., Walla Walla, open bids about Jan. 1, 3 story, 40 x 150 ft., brick and tile, for Walla Walla General Hospital. $150,000.

Calif., Alhambra—Church—First Methodist Episcopal Church, having plans prepared by C. F. Skilling, 430 Bradbury Bldg., Los Angeles, 65 x 95 ft., Main and Alamansor Sts. $150,000. Noted July 10.

Calif., Huntington Park—Theatre and Apartment—West Coast Theatre Co., 643 South Olive St., Los Angeles, having plans prepared by Lindley & Selkirk, 800 Amer. Bank Bldg., 2 story, 114 x 150 ft., stone, South Pacific Blvd., here. $150,000.

Calif., Lomita — School — Lomita High School Dist. had plans prepared by A. C. Martin, Higgins Bldg., Los Angeles, 3 story, 70 x 257 ft. classroom building, 1 story, 32 x 84 ft. manual art building, 1 story, 32 x 84 ft. domestic science building, and 1 story, 70 x 120 ft. auditorium, all brick. $350,000.

Calif., Los Angeles—Store and Loft—Harris & Frank, 443 South Spring St., having plans prepared by Curlett & Beelman, Union Bank Bldg., approximately 12 story and basement, 60 x 150 ft., rein.-con., Hill St.

Calif., Oakland—Store—J. Bruener Co., 281 Geary St., San Francisco, plans 8 story and basement, fireproof, Hobart and Franklin Sts. To exceed $150,000. Engineer and architect not selected.

Calif., Oakland—Warehouse, Garage, etc.—Pan-Amer. Petroleum Corp., Security Bldg., Los Angeles, plans warehouse, garage, concrete pier, etc., at Clinton Basin, also several sales service stations throughout city, and 15 storage tanks, 25,000 to 50,000 bbl. capacity, here. $200,000.

Calif., San Francisco — Store — Granat Bros., 2242 Mission St., having plans prepared by A. T. Ehrenpfort, Russ Bldg., 3 story and basement, rein.-con., 20th and Mission Sts. $150,000.

Calif., San Francisco—Warehouse, etc.—Pan-Amer. Petroleum Corp., Security Bldg., Los Angeles, plans warehouse, pier, 12 storage tanks, 25,000 to 50,000 bbl. capacity, 20 district sales service stations throughout city, and distributing plant, foot Army St., here. $250,000.

Calif., Santa Barbara—Lodge and Apartment—Santa Barbara Aerie 442, Fraternal Order of Eagles, plans to purchase site for lodge and apartment building. $150,000 or more.

Calif., Santa Barbara—Court House—Supervs. Santa Barbara Co. plan new courthouse to exceed $150,000. Engineer and architect not selected.

Calif., Santa Rosa — Church — Christian Church of Santa Rosa made preliminary plans fireproof church, Ross St. $150,000. Engineer and architect's names withheld.

Calif., San Mateo—School—San Mateo Union High School Dist., plans to purchase site for new school. $150,000 or more. Engineer and architect not selected.

Calif., Santa Monica — Church — A. C. Martin, archt., Higgins Bldg., Los Angeles, soon takes bids brick church, here, for St. Monicas Catholic Church, 8th St. Noted May 15.

Calif., Santa Monica—Hotel—A. I. Jordan, 111 West Washington St., Chicago, Ill., had plans prepared by A. Armstrong, 38 South Dearborn St., Chicago, Ill., 11 story and basement, approximately 100 x 150 ft., rein.-con. and steel hotel, here.

Ont., Fergus—High School—High School Bd., J. A. Wilson, secy., plans 2 story and basement, 8 or 10 room, rein.-con., brick and steel, plain foundation, $150,000. Engineer and architect not selected.

Ont., Grimsby—High School—Bd. Educ., W. F. Randall, secy., plans 2 story and basement, 10 or 12 room, rein.-con., brick and steel, plain foundation. $150,000. Engineer and architect not selected.

Ont., Ottawa—College—Oblate Fathers, East Ottawa, having plans prepared by Gascon & Parent, 502 St. Catherine St. W., Montreal, Que., new building in connection with seminary, Main St., here. $300,000.

Ont., Pembroke—High School—School Bd. takes bids early in 1925, new high school. $175,000. Engineer and architect not selected. R. L. McCormick, chn.

Ont., Port Arthur—Church—St. Johns Anglican Church, Waverly St., having plans prepared by George, Moorehouse & King, 65 Victoria St., Toronto, 1 story and basement, rein.-con., brick and steel, plain foundation, Waverley St. $200,000.

Ont., Toronto—Church—Windemere Ave. Methodist Church, 526 Windemere Ave., plans 1 story and basement, rein.-con., brick and steel, plain foundation. $150,000. Engineer and architect not selected.

Ont., Toronto—Exhibition—City plans 1 story live stock building, concrete, brick, steel and stone, for Royal Winter Fair Exhibition Park. $500,000. Engineer and architect not selected.

Ont., Toronto—Exhibition—Dept. Pub. Wks., Parliament Bldg., plans 1 story, rein.-con., brick and steel, plain foundation, Exhibition Park. $150,000. Engineer and architect not selected.

Ont., Toronto—Hospital—City plans rein.-con., brick, steel and stone, plain foundation, Sammon and Coxwell Aves. $500,000. Engineer and architect not selected.

Ont., Toronto — Hospital — City having plans prepared by W. Price, City Hall, 2 or 3 story and basement, 80 x 100 ft., rein.-con., brick and steel, plain foundation. $150,000.

Ont., Toronto — School — University of Toronto, Queens Park, plans 3 story and basement, rein.-con., brick and steel, plain foundation, College St. $650,000. Engineer and architect not selected.

Ont., Toronto—Store—Murray-Kay Co. Ltd., 17 King St. E., plans 8 story and basement, 100 x 120 ft., rein.-con., brick and steel, plain foundation, Yonge and Dundas Sts. $700,000. Engineer and architect not selected.

B. C., Victoria—Hotel—Canadian Pacific Ry., Windsor St., Montreal, Que., plans 8 story, 150 room, concrete, tile and stone addition to Empress Hotel. $400,000. J. M. R. Fairbairn, Montreal, ch. engr. Architect not selected.

B. C., Victoria—Hotel—Hotel Strathcona Co., Douglas St., plans 6 story, 90 x 120 ft. concrete, tile and brick addition. $200,000. H. S. Griffith, Dominion Bldg., Vancouver, archts.

BIDS DESIRED

Mass., Boston—Office—Northern Realty Co., c/o J. C. Kiley, 18 Tremont St., taking bids 5 story, rein.-con., brick and stone, plain foundation, 198-304 Cambridge St. $150,000. A. J. Carenter, Jr., 1 Moss Hill Rd., Jamaica Plain, archt. Noted Dec. 11.

Mass., Norwood—High School—Bd. Selectmen taking bids 2 story and basement, 58 x 227 ft., brick and stone, Nichols St. $300,000. W. G. Upham, Bigelow Bldg., archt. Noted Dec. 11.

Mass., Onset—Church—Our Lady Star of Sea Roman Catholic Church Society, taking bids 1 story and basement, 50 x 110 ft., brick and stone church. $150,000. Maginnis & Walsh, 100 Boylston St., Boston, archts. Noted Nov. 6.

N. C., Charlotte—Sales and Service—Dec. 29, by A. Kahn, archt., 1000 Marquette Bldg., Detroit, Mich., 5 story and part basement, 100 x 200 ft., rein.-con., brick and stone, plain foundation, Trade and North Graham Sts., here, for C. C. Coddington, Inc., West Trade St.

N. C., Raleigh — Office — Dec. 30, by Wachovia Bank & Trust Co., 232 Fayetteville St., 8 story, steel and fireproof office building. Milburn, Heister & Co., Durham, archts. Noted Nov. 13.

O., Mansfield—High School—Jan. 5, by Bd. Educ., C. S. Hill, pres., 3 story and basement, 250 x 400 ft., rein.-con. and brick. $800,000. Althouse & Jones, Mansfield, archt. Noted Jan. 31.

O., Springfield—Hospital—Dec. 29, by Bd. Comrs. Clark Co., 3 story, 38 x 190 ft. tuberculosis hospital, brick, steel and concrete. $300,000. Schenck & Williams, 908 Mutual Home, Dayton, archts.

O., Toledo—Church—Dec. 26, by Mills, Rhines, Bellman & Nordhoff, archts., Ohio Bldg., 3 story and basement, 109 x 175 ft., brick and steel, plain foundation, Collingwood Ave., for Collingwood Presbyterian Church, 2108 Collingwood Ave. $250,000.

Mich., Ludington—High School—Jan. 8, by H. E. Waits, supt. schools, 3 story and basement, rein.-con., brick and steel, plain foundation, for Bd. Educ. $300,000. Robinson & Campau, 715 Michigan Trust Bldg., Grand Rapids, archts.

Ill., Cairo—Schools—Jan. 14, by L. J. Kleb, secy. Bd. Educ., two 2 story and basement, rein.-con., brick high schools. $300,000. Royer, Danely & Smith, Flat Iron Bldg., Urbana, archts. Noted Aug. 28.

Ill., Chicago — Apartment — F. Cauley, archt., 7710 North Marshfield Ave., taking bids 3 story and basement, 90 x 120 ft., brick and stone, plain foundation, Clayton St., for L. H. Summers, 7710 North Marshfield Ave. $150,000.

Ill., Chicago—High Schools Dec. 28, by Bd. Educ., J. Burns, business mgr., 650 South Clark St., 2 story and part basement, 36 x 79 ft., 79th and Calumet; also 2 story and part basement, 89 x 361 ft., 82nd and Bishop Sts., both rein.-con., brick and stone, plain foundations $550,000, each.

Buildings—Commercial (Continued)

Ill., Chicago—Hospital—Berlin & Swern, archts. and engrs., 19 South La Salle St., taking bids 8 story and basement, 35 x 45 ft., rein.-con., brick and stone addition, plain foundation, Congress and Wood Sts., for Presbyterian Hospital. A. Bacon, supt., 1753 West Congress St. $250,000. Noted May 1.

Ill., Chicago—Hotel—Realty Building & Constr. Co., 177 North State St., taking bids 4 story and basement, 60 x 150 ft., brick and terra cotta, plain foundation, 540 Wellington St. $150,000. R. Gregori, 155 North Clark St., archt.

Ill., Evanston—Apartment—Zook & McGughy, archts., 56 East Congress St., taking bids 3 story and basement, 60 x 190 ft., brick and stone, plain foundation, Central and Eastwood Sts., here, for A. C. Holmes, 7502 Woodward St., Detroit, Mich. $150,000.

Ill., Waukegan — Apartment — A. S. Alschuler, Inc., archts., 28 East Jackson Blvd., Chicago, taking bids 2 story and basement, 100 x 137 ft., rein.-con., brick and stone, Water and Genesee Sts., here, for J. A. Miller, 206 Washington St. $175,000.

Wis., Milwaukee—Bank—Jan. 12, by Brust & Philipp, archts., 405 Bway., 1 story and basement, 58 x 120 ft., brick, stone and concrete, plain foundation, North Ave., for North Ave. State Bank, 3506 North Ave. $150,000. Noted Mar. 13.

Wis., Milwaukee—Theater—Amer. Theater Co., c/o G. H. Leipold, archt., 160 Martin St., taking bids 2 story and basement, 72 x 200 ft., brick and tile, plain foundation, Forest Home Ave. $150,000.

Ia., Cedar Rapids—Apartment Hotel—Jan. 2, by H. E. Hunter, archt., Security Bldg., and N. Hatton, associate archt., O. R. C. Bldg., 6 story and basement, 140 x 140 ft., rein.-con., brick and steel, plain foundation, 14th St. and 2nd Ave., E., for Commonwealth Apartment Co., Security Bldg. $400,000.

Minn., St. Paul—School—Dec. 30, by H. W. Austin, city purch. agt., 3 story and basement, rein.-con., brick, tile and stone, Fulton and Palace Sts., for Bd. Educ., City Hall. $175,000. F. X. Tewes, city archt.

Mo., Greenville—Court—Dec. 30, by Clerk Wayne Co., 3 story and basement, brick, concrete and stone. Former bids rejected. M. Laubis, Poplar Bluff, archt. Noted Dec. 4.

Okla., Sapulpa—Temple, etc.—Jan. 5, by C. A. Popkin, archt., Sapulpa, 3 story and basement, 86 x 130 ft., rein.-con. and brick, Creek St., for Masonic Lodge. $160,000. Noted Oct. 9.

Tex., McAllen—College—Jan. 10, by H. P. Smith, archt., Natl. Bank of Commerce, San Antonio, administration building, two dormitories and power house, brick and stone, plain foundation, here, for Baptist College Church, c/o Baylor University, Waco. $250,000.

Calif., Los Angeles—Storehouse—Los Angeles Co. taking bids 4 story, 60 x 120 ft., rein.-con., near Lincoln Park. To exceed $150,000. Allied Architect, Mechanical Dept., Hall of Records Bldg., archt.

Calif., Los Angeles—Warehouse—Jan. 5, by Supervs., Los Angeles Co., 4 story, 100 x 120 ft., fireproof, Mission Rd. and Alhambra Ave. To exceed $150,000. Mechanical Dept., Hall of Records, archt.

Calif., Oakland—Bank and Office—G. W. Kelham, archt., Sharon Bldg., San Francisco, taking bids 17 story and basement, Class A, 14th and Bway. Sts., here, for Central Natl. Bank, Bway. and 14th Sts. $1,000,000. Noted May 15.

BIDS RECEIVED

N. J., Elizabeth—Courthouse, etc.—Bd. Freeholders Union Co., Dec. 15, general contract for courthouse annex, from Bowe & Millimet, Hudson Bldg., Union Hill, $381,000, jail, from W. H. and F. W. Cane & Co., Baldwin Ave., Jersey City, $145,265; plumbing for both jobs, from R. P. Lister, 711 High St., Newark, $43,348; heating and ventilating, from J. H. Nelles, 835 Springfield Ave., Newark, $24,843.

Pa., Phila.—High School—Bd. Educ., 19th and Chestnut Sts., Dec. 17, general contract 5 story and basement, 222 x 317 ft. rein.-con. and brick, plain foundation, 59th and Lancaster Sts., from Cramp Co., Denckla Bldg., $1,766,345; plumbing, from W. Ambrose, Leverington and Umbria Sts., $89,359; heating, from S. Faith & Son, 2427 Penna Ave., $206,000; electric, from Ross Electric Co., Block and Brown Sts., $105,000. Noted Dec. 11.

Ill., Chicago—Hotel—Broadview Hotel Co., general contract 7 story and basement, 100 x 125 ft., rein.-con., brick, steel and terra cotta, plain foundation, 5532-48 Hyde Park Blvd., from C. B. Johnson & Son, 111 West Washington St. Archts. est. $1,200,000.

Calif., San Francisco—School—Bd. Pub. Wks., Dec. 19, general contract Alamo School, 2 story and basement, rein.-con. and brick, 23rd St., from J. L. McLaughlin, 251 Kearny St., San Francisco, $331,600. Noted Nov. 27.

CONTRACTS AWARDED

Mass., Boston—Office—Goddard Estate, c/o C. G. Loring, archt., 7 Water St., 3 or more story and basement, Hanover and Court Sts., to Beacon Constr. Co., 110 State St. Noted Dec. 4.

Mass., Boston—Apartment—Rotenburg & Rudnick, 149 Audubon Rd., will build 5 story and basement, 5,000 sq.ft. floor space, brick, Quint Ave., Allston Sect., by day labor. $200,000. Silverman, Brown & Heenan, 51 Cornhill St., archts.

Mass., Boston—Theatre—Eggleston Sq. Theatre, c/o Littlefield Trust, Eggleston Sq., 2 story, 90 x 175 ft., rein.-con., brick and steel, Washington and Beethoven Sts., to J. J. Powers Co., 33 Myrtle Ave., Cambridge. Archts. est. $175,000.

Conn., Greenwich — School—Bd. Educ., general contract Bryan Hill School, 2 story and basement, brick, steel and stone, plain foundation, to D. B. Roberts Co., Inc., 1480 Bway., New York City, $172,000; heating, to Hauxwell & Smith, 46 Broad St., Port Chester, N. Y. $32,169. Noted Aug. 7.

N. Y., Fordham—Library—E. G. Perrot, archt., Woolworth Bldg., New York, 3 story and basement, 70 x 140 ft., brick and steel, plain foundation, here, to Sobray-Whitcomb & Co., 105 West 40th St., New York City, for Fordham University. Noted Nov. 13.

N. Y., New York—Apartment—Eleven Hundred and Seven 5th Ave. Corp., c/o Rouse & Goldstone, archts. and engrs., 512 5th Ave., 14 story, brick, steel and stone, plain foundation, 92nd St. and 5th Ave. to George A. Fuller Corp., 175 5th Ave. Archts. est. $1,000,000.

N. Y., New York—Apartment—Bway. Cummings St. Corp., c/o Gronenberg & Leuchtag, archts., 450 4th Ave., will build 5 story, 90 x 110 ft., brick, steel and stone, plain foundation, Cummings St., by day labor. $200,000.

N. Y., New York—Apartment—Bway.-Cummings St. Corp., c/o Gronenberg & Leuchtag, archts. and engrs., 450 4th Ave., will build 5 story, 90 x 150 ft., brick, steel and stone, plain foundation, 35 Seaman Ave., by day labor. $300,000.

N. Y., New York—Apartments—Vyse Building Corp., c/o C. Kreymborg, archt., 2534 Marion Ave., will build two 5 story brick, steel and stone, plain foundation, Vyse Ave., by day labor. $150,000 each.

N. Y., New York—Office—R. M. Catts Syndicate, c/o Warren & Wetmore, archts., 16 East 47th St., 25 story, brick, steel and stone, plain foundation, Madison Ave. between 35th and 36th Sts., to Dwight P. Robinson & Co., Inc., 25 East 46th St. Archts. est. about $5,000,000.

N. Y., New York—Office—Fred T. Ley & Co., 19 West 44th St., will build 22 story brick, steel and stone, plain foundation, 80 John St., by day labor. Shreve & Lamb, 52 Vanderbilt Ave., archts. and engrs.

Pa., Allentown—School—Bd. Educ., 2 story and basement, 124 x 172 ft., brick and steel, plain foundation, Plymouth and Washington Sts., to Friel-McLeister, 1615 Spruce St., Phila., $169,172. Noted Dec. 18.

Pa., Haverford—Apartment—P. Beam, 3 story and basement, 60 x 160 ft., brick, stone and steel, plain foundation, Lancaster and Haverford Sts., to C .C. Pace, Cynwyd, (Balia Cynwyd P. O.). Archts. est. $300,000. Noted Oct. 23.

Pa., Pittsburgh—Lodge—B. P. O. E. 339, N. S., general contract remodeling and constructing 3 story and basement addition, Cedar Ave., to W. J. Nelson, 1208 Gibbon St. Archts. est. $150,000. Noted Sept. 11.

Pa., Pittsburgh—Store and Office—Smithfield & Sixth Ave. Land Co., general contract 4 and 6 story and basement, Smithfield and 6th Aves., to Mellon Stuart Co., Oliver Bldg. Archts. est. $500,000.

O., Cedar Point (Sta. Sandusky) Hotel—Hotel Breakers Co., 3 story and basement, 53 x 370 ft., brick, steel and stucco, addition, to Boldt Constr. Co., 1969 East 70th St. Archts. est. $250,000. Noted Oct. 23.

O., Cleveland—Garage—W. C. Ferguson, dir. Pub. Serv., City Hall, 1 story, 170 x 191 ft., brick and steel, Dell Ave., to Schrader Constr. Co., Euclid-46th Market Bldg. Archts. est. $150,000. Noted Dec. 18.

O., Mansfield—Commercial, Theatre and Temple—Knights of Pythias, 4 story and basement, 90 x 180 ft., brick, steel and concrete, to Dresser-Minton-Scobell Co., The Arcade. Archts. est. $200,000. Noted Nov. 20.

O., East Cleveland (Cleveland P. O.)—Apartment—A. Green, 8914 Yale Ave., 3 story and basement, 74 x 36 ft., brick and timber, Chapman Ave., to M. Lees, 2099 Lamberton Rd. Archts. est. $150,000.

O., Toledo—Hospital—Mills, Rhines, Bellman & Nordhoff, archts., Ohio Bldg., exterior work for 4 story and basement, 39 x 62 ft., brick and steel, plain foundation, Cherry St., to Watts, Suhrbier Co., Miami St., for Flower Hospital. $96,000.

Mich., Detroit—Garage—Campau Estate, Cass and Baltimore Aves., 3 story and basement, 118 x 155 ft. ramp garage, to Everett Winters Co., 1024 Book Bldg., $150,000.

Mich., Detroit—School—Bd. Educ., 1354 Bway Ave., 2 story and basement, rein.-con., brick and steel, plain foundation, Linwood Ave., to H. G. Christman Co., 315 Stevens Bldg. Archts. est. $175,000.

Wis., Plymouth—Sanatorium—Sheboygan Co. Tuberculosis Sanatorium Comn., c/o G. Wisselink, chn., Hingham, 2 story and basement, 38 x 300 ft. and 44 x 78 ft., brick and tile, plain foundation, to J. Rezash, Two Rivers. Archts. est. $250,000. Noted Nov. 27.

Ia., Ames—Home Economics—State Bd. Educ., general contract 2 story and basement, rein.-con., brick, tile and stone, Iowa State College, to J. and W. A. Elliott Co., 906 Lumber Exch., Minneapolis, Minn., $382,870. Noted Dec. 18.

Ia., Des Moines—High School—Bd. Educ., G. L. Garton, secy., Warren G. Harding Junior High School, 2 story and basement, 210 x 320 ft., rein.-con., and brick, plain foundation, Cornell and Ovid Sts., to A. H. Neumann & Co., 519 Hubbell Bldg., $411,667; plumbing, to Van Dyck Plumbing & Heating Co., 1111 Walnut St., $91,500. Noted Dec. 4.

Ia., Cedar Rapids—Hospital—St. Lukes Methodist Hospital, general contract 6 story, 40 x 180 ft., concrete, brick and stone, to O. F. Paulson Constr. Co., Granby Bldg. Noted Dec. 18.

Ia., Ottumwa—Hospital, etc.—St. Joseph Hospital, 4 story and basement, 46 x 154 ft., 3 x 100 ft., 43 x 70 ft., brick and concrete, masonry and enclosing building contract, to Immel Constr. Co., Dana Bldg., Fond du Lac, Wis. Archts. est. $250,000. Noted Nov. 6.

Mo., Kansas City High School—Bd. Educ., 4 story and part basement, 150 x 290 ft., rein.-con. and native stone, to Fogel Constr. Co., 619 Reliance Bldg., $629,000. Noted Nov. 27.

Tex., Houston—Bank and Office—Public Natl. Bank, 8 story (ultimately 12 story), rein.-con., brick and steel, Main and Preston Sts., to Southwestern Constr. Co., 420 West Bldg., approximately $350,000. Noted July 10.

Calif., Los Angeles—Bank and Office—Parkinson & Parkinson, archts, Title Insurance Bldg., general contract 12 story and basement, rein.-con., Spring St., to J. C. Bannister, 6631 Hollywood Blvd., Hollywood, for Pacific Southwest Trust & Savings Bank. $185,000.

Calif., Los Angeles—Hotel and Store—F. A. Elliott, c/o Jonathan Club, 12 story and basement, 50 x 116 ft., rein.-con., West 6th St., to Orndorff Constr. Co., 351 North Western Ave., $526,500. Noted Sept. 18.

Calif., Los Angeles Museum—Supervs. Los Angeles Co., concrete, brick and tile masonry contract, etc., for (1st unit) 3 story and basement, 150 x 200 ft., brick, tile and steel museum, Exposition Park, to J. C. Bannister, 6331 Hollywood Blvd., $209,810.

Calif., Los Angeles—Office—F. E. Morgan, et al., 588 North Vine St., 13 story and basement, 100 x 185 ft., rein.-con., 8th and Francisco Sts., to Simpson Constr. Co., Bank of Italy Bldg., fixed fee basis.

Calif., Los Angeles—Office and Loft—Seventh-Main Building Co., c/o Curlett & Beelman, archts., Union Bank Bldg., steel, for 12 story and basement, 145 x 170 ft., brick, steel and rein.-con., 7th and Main Sts., to Baker Iron Wks., 912 North Bway.

Calif., Los Angeles—Store and Loft—S. Goodman, 13 story and basement, 50 x 90 ft., rein.-con., 7th St., to Meyer & Holler, 315 Wright-Callendar Bldg. Noted May 29.

Calif., Los Angeles—Store and Loft—Martz Estate, c/o J. and D. Parkinson, archts., Title Insurance Bldg., steel contract for 3 story (ultimately 12 story) and basement, 7th St., to Llewllyn Iron Wks., 1200 North Main St.

Calif., Oakland—Home—Supervs. Alameda Co., 2 story and basement, rein.-con. nurses home, 14th Ave., to Schuler & MacDonald, 306 12th St., Oakland, $249,000. Noted Nov. 27.

Calif., Oakland—Hotel—Colt Investment Co., c/o L. L. Ford, archt., 306 14th St., 6 story and basement, steel, brick and terra

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cotta, 15th and Harrison Sts., steel contract, to Judson Mfg. Co., Park Ave.; and excav., to J. Catucci, 1212 18th Ave. Noted June 5.

Calif., Oakland—Hospital—Oakland Hospital Corp., c/o W. E. Milwain, archt., Pacific Bldg., 7 story and basement, rein.-con., 31st St., to F. W. Maurice, 1325 East 25th St., $400,000.

Calif., Santa Monica — Apartment and Hotel—Shoreham Hotel Co., 124 San Vincente Blvd., 11 story and basement, 32 x 150 ft., rein.-con., Ocean Ave., to Trewhitt-Shields, Western Mutual Life Bldg., Los Angeles. Archts. est. $1,000,000.

S. A., Colombia, Bogota — Market, Schools, etc.—City of Bagota, constructing markets, schools, housing development, slaughter house, railways, waterworks, incinerator, etc., to Ulen & Co., 120 Bway., New York City. $3,500,000.

Federal Government Work

PROPOSED WORK

Tex., Dallas—Post Office—U. S. Engineer Office, plans constructing new post office, here.

BIDS DESIRED

Mass., South Boston (Boston P. O.)—Jan. 7, by Bureau Yards & Docks, Navy Dept., Wash., D. C., sewerage system at Dry Dock, here. Noted Dec. 11.

Ill., Galesburg—Remodeling, etc.—Jan. 13, by Treas. Dept. at office Supervising Archt., Wash., D. C., remodeling and enlarging Post Office, here.

Wash., Bremerton—Pier—Feb. 4, by U. S. Engineer, 1,100 ft. pier, here. Noted Oct. 16.

BIDS RECEIVED

Conn., Norwalk—Dredging—U. S. Engineers Office, Providence, R. I., dredging in Norwalk Harbor, here, from J. S. Packard Dredging Co., 1004 Turks Head Bldg., Providence, R. I., Sect. 1 $0.189 per cu.yd., Sect. 2 $0.289 per cu.yd.

Pa., Phila.—Addition—Treas. Dept. at office Supervising Archt., Wash., D. C., addition to Post Office and Court House, here, from E. Zimmerli, Woodbury, N. J., $16,000.

Pa., Phila.—Storehouse—U. S. Engineer Office, War Dept., Wash., D. C., constructing storehouse at Ft. Mifflin, here, from W. P. Thurston Co., 42 Merchants Natl. Bank Bldg., Richmond, Va., $23,700. Noted Nov. 20.

CONTRACTS AWARDED

Ala., Florence—Cement—P. T. Samuels, ch. supply div., furnishing 30,000 bbl. cement, to Lehigh Portland Cement Co., Woodward Bldg., Birmingham, $2.23 per bbl.; 20,000 bbl., to Atlas Portland Cement Co., Brown Marx Bldg., Birmingham, $2.25 per bbl.

Calif., San Fernando—Buildings—U. S. Veterans' Bureau, 791 Arlington Bldg., Wash., D. C., constructing hospital buildings, general contract, to North Pacific Constr. Co., 1302 Detwiler Bldg., Los Angeles, $755,900; heating, to T. E. Thomas Plumbing & Heating Co., Ogden, Utah, $58,221; electric work, to Gans Bros., 141 South Main St., Los Angeles, $56,730. Noted Oct. 30.

Unclassified

PROPOSED WORK

Jetties — North Long Branch (Long Branch P. O.), **N. J.**—Plans repairing Stone Jetties A and B. J. Strollo, 3rd Ave., Long Branch, engr.

Telephone Lines, Cables, etc. — Chattanooga, Tenn. — Cumberland Telephone & Telegraph Co., Nashville, plans new line extensions, cables, etc., here. $200,000.

Wharves, etc. — Beaumont, Tex. — Election soon $200,000 bonds for wharves and docks. Address Mayor.

Gas System—Comanche, Tex.—Election Jan. 6, $50,000 bonds fuel gas system, gas mains, laterals, pumpers, etc. J. R. Eaves, mayor. Engineer not selected.

Gas Mains—Long Beach, Calif.—City plans 10 in. gas mains from Dominguez Field to Carson St. and Prospect Ave. Not to exceed $45,000. C. H. Windham, city engr.

Athletic Field — Los Angeles, Calif. — Plans athletic field in southwest section of city. $100,000 or more.

Street Lighting System — Los Angeles, Calif.—Made plans 102 pressed steel standards on Santa Monica Blvd. between 101st and 118th Aves. To exceed $25,000.

Pier, etc.—Oakland, Calif.—See "Buildings—Industrial."

Park Improvements—Palo Alto, Calif.—Plans election $75,000 or more bonds, park improvements. J. F. Bxybee, Jr., city engr.

Gravel Plant—Pleasanton, Calif.—Rhodes-Jamieson Co., Bway. and Water Sts., Oakland, plans gravel plant, on 135 acre site, here.

Pier, etc. — San Francisco, Calif. — See "Buildings—Commercial."

Grain Elevator—Owen Sound, Ont.—Election in January, $450,000 bonds for grain elevator, steel and cement, on water front. C. Gordon, city clk.

BIDS DESIRED

Foundation — Springfield, Mass. — Pub. Building Dept., taking bids foundation for 2 story and basement, 60 x 160 ft., brick and stone elementary school, plain foundation, Boston Rd., East Springfield. M. W. Maloney, 23 Pearl St., archt.

Bulkheads—Long Island City, N. Y.—See "Streets and Roads."

Excavation—Milwaukee, Wis.—J. Hunholz, 2310 Vliet St., taking bids excavation for 8 story and basement, 62 x 75 ft., concrete and brick apartment, plain foundation, Mason St. Total $300,000. Dick & Bauer, 811 State St., archt.

Transmission Line—Oklahoma—Dec. 31, by C. J. Huffaker (owner and engr.), Fairfax, 6 mi. 13,200 volt electric transmission line from Ralston to Fairfax with transformer station at each end. $25,000. Noted Nov. 6.

Ornamental Street Lighting System—Los Angeles, Calif.—Jan. 5, by Supervs. Los Angeles Co., ornamental street lighting system on Whittier Blvd. between Indiana St. and Pasadena Ave., 93 pressed steel posts, cable, conduits, etc. $40,000. G. Jones, Hall of Records Bldg., engr.

Ornamental Street Lighting—Los Angeles, Calif.—Taking bids 129 pressed steel ornamental light posts on Figueroa St. between 11th and Adams Sts. $60,000. H. A. Van Norman, City Hall, engr.

BIDS RECEIVED

Athletic Field, etc.—New York, N. Y.—Park Bd., at office Dept. Parks, Municipal Bldg., Dec. 18, improving De Witt Clinton Athletic Field in De Witt Clinton Park, from Fleming & Sheppard, 116 Broad St., $10,780; grading, etc., new footpath in Inwood Hill Park, from G. Williamson, 46 West Bway., $11,575. Noted Dec. 11.

Heating, etc.—Phila., Pa.—See "Buildings—Commercial."

Street Lighting System — Los Angeles, Calif. — Ornamental street lighting system on Santa Monica Blvd., from R. A. Wattson, 4928 Melrose Hill Ave., $14,086; Moneta Ave. between Florence and Manchester Sts., from Electric Light Supply Co., 216 West 3rd St., $43,542; Moneta Ave. between Main and Florence Sts., also Irving Blvd., from Newberry Electric Corp., 724 South Olive St., $129,778 and $8,715 respectively; Palm Grove Ave. and June St., from A. C. Rice, 1963 Santee St., $6,521. Noted Dec. 11.

CONTRACTS AWARDED

Heating—Greenwich, Conn.—See "Buildings—Commercial."

Culverts, etc.—Cleveland, O.—For 300 ft. 10 x 25 ft. concrete culvert, 200 ft. 18 in. concrete retaining wall and 2,800 cu.yd. excav., in Doan Brook in Wade Park, to G. A. Rutherford Co., 2725 Prospect Ave., $37,601. Noted Dec. 18.

Heating and Plumbing—Des Moines, Ia.—See "Buildings—Commercial."

Generator Unit, etc.—Fairview, Okla.—City, new 200 hp. oil engine generator unit, 1,500 bbl. oil tank, feeder pump, etc., for light plant, to Fairbanks, Morse Co., Beloit, Wis. $20,346. Engrs. est. $25,000.

Gas Mains — Los Gatos, Calif. — See "Streets and Roads."

Pier, etc.—San Francisco, Calif.—State Harbor Comn., Ferry Bldg., Pier 50, 650 ft. long, 385 ft. wide, concrete and timber, to Clinton Constr. Co., 923 Folsom St., $587,000; also superstructure 2 story rein.-con. terminal warehouse, at China Basin, to K. E. Parker Co., 519 California St., $315,950. Noted Nov. 27.

Housing Development—Bogota, Colombia, S. A.—See "Buildings—Commercial."

Material and Equipment

PROPOSED WORK

Road Machinery—Wisconsin—St. Croix Co. appropriated $2,871 to purchase road machinery during 1925, incl. 1 large road grader, etc., C. W. Nystrom, comr.; La Crosse Co. $20,000, purchase, rental and repair road machinery, J. Hintgen, comr.; Brown Co. to purchase graders, etc., G. J. Cormier, comr.; Dane Co. $6,000, rental and repair machinery, J. R. Caldwell, comr.; Door Co. $4,000, graders, J. M. Laurie, comr.; Washington Co. $10,000, purchase, rental and repair machinery, C. Johnson, comr.; Chippewa Co. $10,000, purchase, rental and repair machinery, W. H. Taylor, comr.; Ozaukee Co. $9,000, truck, tractor and snow plow, W. J. Ubbink, comr.; Oneida Co. $22,725, 17 graders and 2 tractors; Ashland Co. $10,000, 5 patrol graders, elevating loader, screening plant and 5 graders and 5 Ford trucks, W. E. Dillon, Ashland, comr.; Clark Co. $5,000, for purchase, rental and repair road machinery, O. J. Weyhmiller, Neillsville, comr.; Iron Co. $7,000, drag line outfit, 2 motor graders and 2 snow plows; Juneau Co. $2,500, truck and tractor, A. V. Robison, New Lisbon, comr.

Road Machinery—Wisconsin—Jefferson Co. voted $17,500 bonds to purchase road machinery during 1925, incl. patrol graders, back sloper, etc., R. D. Royce, Fort Atkins, comr.; Vilas Co. $14,000 bonds, incl. 9 motor graders, and 1 snow plow, W. F. Hunter, comr.

Snow Removal Equipment — Appleton, Wis.—Street and Bridge Comn., c/o L. E. Williams, city clk., soon takes bids additional snow removal machinery, incl. snow plow.

Road Oil—Portage, Wis.—Columbia Co., c/o J. T. Henton, highway comr., appropriated $20,000, for road oil.

Cable — Kansas City, Mo. — Bd. Fire & Water soon takes bids cable for new fire alarm system. $10,000. A. J. Stuart, purch. agt.

Diesel Engine — Lubbock, Tex. — See "Buildings—Industrial."

Pumping Equipment, etc.—Los Angeles, Calif.—City Harbor Comn., plans to purchase pumping equipment, 5,000 g.p.m. for canneries at Fish Harbor. $12,000-$20,000.

Road Grader—Orland, Calif.—City plans to purchase 1 road grader with 7 ft. blade. E. P. Mapes, city clk.

Tank—Terra Bella, Calif.—Terra Bella Irrigation Dist., rejected bids one 1,500 bbl. steel water tank. Project temporarily abandoned. E. R. Clemens, secy. Noted Nov. 20.

Tractor—Venice, Calif.—City plans to purchase 1 tractor for Street Dept. R. B. Wallace, city clk.

BIDS DESIRED

Crusher—Viroqua, Wis.—Vernon Co. in market for 1 rock crusher to produce 1 in. limestone. A. Ristow, highway comr.

Tractor—Wauwatosa, Wis.—Jan. 2, by A. Brigham, secy. Bd. Pub. Wks., 2 ton crawler tractor, with snow plow.

Turbo Alternator—Valley City, N. D.—Jan. 5, by O. N. Bergman, supt. Municipal Electric Light & Water Wks., one 1,000 kw. 80 per cent P. F. turbo alternator with surf condenser, auxiliary equipment, piping, connections and coal handling equipment.

Cement — Portland, Ore. — Jan. 7, by Comrs. Multnomah Co., 14,000 bbls. more or less Portland cement, for use in construction Sellwood bridge, over Willamette River. G. Lindenthal, 250½ 3rd St., consult. engr.

Bucket Dredgers—Vancouver, B. C.—Ashnola Gold & Platinum Dredging Co. Ltd., 816 Standard Bank Bldg., Hastings St. W., in market for one or more bucket dredgers.

BIDS RECEIVED

Cement—Tracy, Calif.—W. Schlossman, secy. Banta-Carbona Irrigation Dist., Dec. 10, 7,500 or more bbls. cement, from H. Cowel, Lime & Cement Co., 2 Market St., San Francisco, at $2.73 to $2.78 per bbl. according to point of delivery. Noted Nov. 27.

CONTRACTS AWARDED

Pipe—Dallas, Tex.—To N. O. Nelson Mfg. Co., 915 McKinney Ave., Dallas, wrought iron pipe, 10,000 ft. 2 in. $35.44 per 100 ft., 5,000 ft. 1½ in. $24.76, 15,000 ft. $10.56, and 2,000 ft. 1 in. $15.30.

Okla., Ft. Sill—Boiler Houses, etc.—Constructing Quartermaster, Ft. Sill, 3 boiler houses and heating plants, to F. B. Hannan, Lawton, $35,900. Noted Nov. 27.

Structural Steel — Oakland, Calif. — W. Knowles, archt., Central Bldg., Oakland and Hearst Bldg., San Francisco, approximately 1,200 tons structural steel for Elks Clubhouse, here, to Judson Mfg. Co., 604 Mission St., San Francisco.

Structural Steel—Sacramento, Calif.—L. F. Stark, archt., Oschsner Bldg., 1,000 tons structural steel, for Elks Clubhouse, to Palm Iron Wks., 1814 15th St., Sacramento, $112,903.

Pipe—Ventura, Calif.—For 3,440 lin.ft. 36 and 48 in. rein.-con. pipe, etc., to United Concrete Pipe Co., P. O. Box 6, approximately $25,350.

Volume 93 New York, December 25, 1924 Number 26

Engineering News-Record

A CONSOLIDATION OF ENGINEERING NEWS, ENGINEERING RECORD, AND THE CONTRACTOR

FRANK C. WIGHT, *Editor*

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Engineering News-Record, December 25, 1924. 5 cols. Ill.

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Bootlegging Engineers Just Miss Putting Over a Good One 1032
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Try the INDEX First

EVERY FALL, just before baseball games of the World's Series begin, most of the large metropolitan daily papers publish a notice on the front page which says, in effect:

"Please don't telephone us for baseball scores. While we wish to give the 'fans' every possible service, an attempt to answer questions regarding the progress of the games would so completely clog our switchboard service as to make it useless for transacting our regular business of collecting and publishing news."

ENGINEERING NEWS-RECORD, likewise, wishes to comply with every reasonable request for service from its readers. That is why it publishes every six months a Classified Index of its technical articles and news. The index for the six months' period July-December, 1924, inclusive, appears in this issue. When you have occasion to refer to an article in the *News-Record*, won't you try to locate it in the Index before phoning or writing to us? If you are unsuccessful in locating the material for which you are looking, then call upon us to help you.

—But try the Index *first*.

IN ADDITION to the indexes which we publish semi-annually, we prepared, last year, in book form, a Consolidated Index covering the years 1917-1922, inclusive. There is still in stock a limited supply of these indexes available for distribution: their cost is $3.

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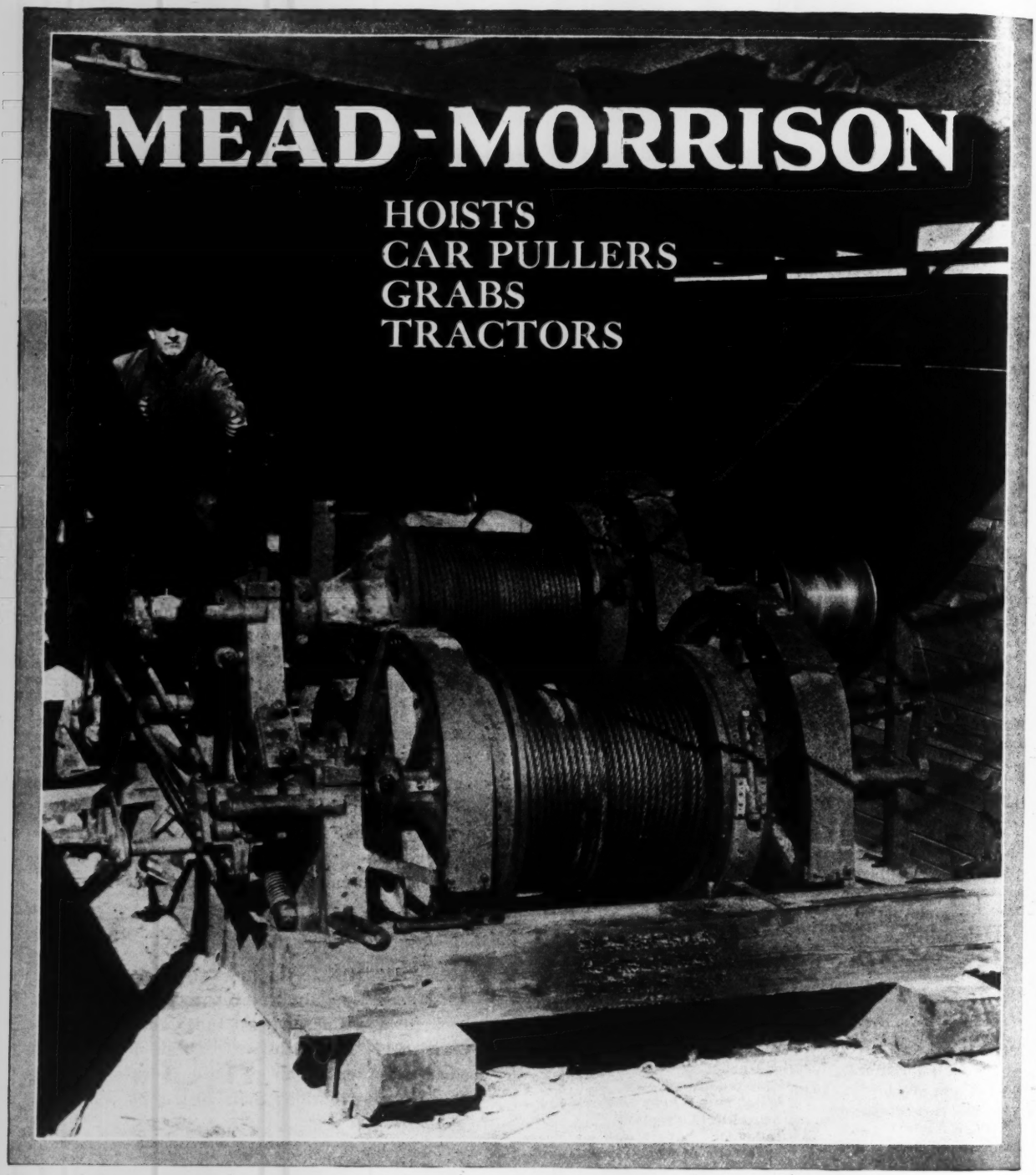


You haven't seen the Road Show until you've seen the Mead-Morrison Exhibit

MEAD-MORRISON MFG. CO., 1229 Prescott Street, East Boston, Mass.

In the Raymond Method we simply place a spirally-reinforced steel form for every concrete pile and pour the pile into it, leaving the form in the ground — what simpler, more logical method is possible?

RAYMOND CONCRETE PILE COMPANY

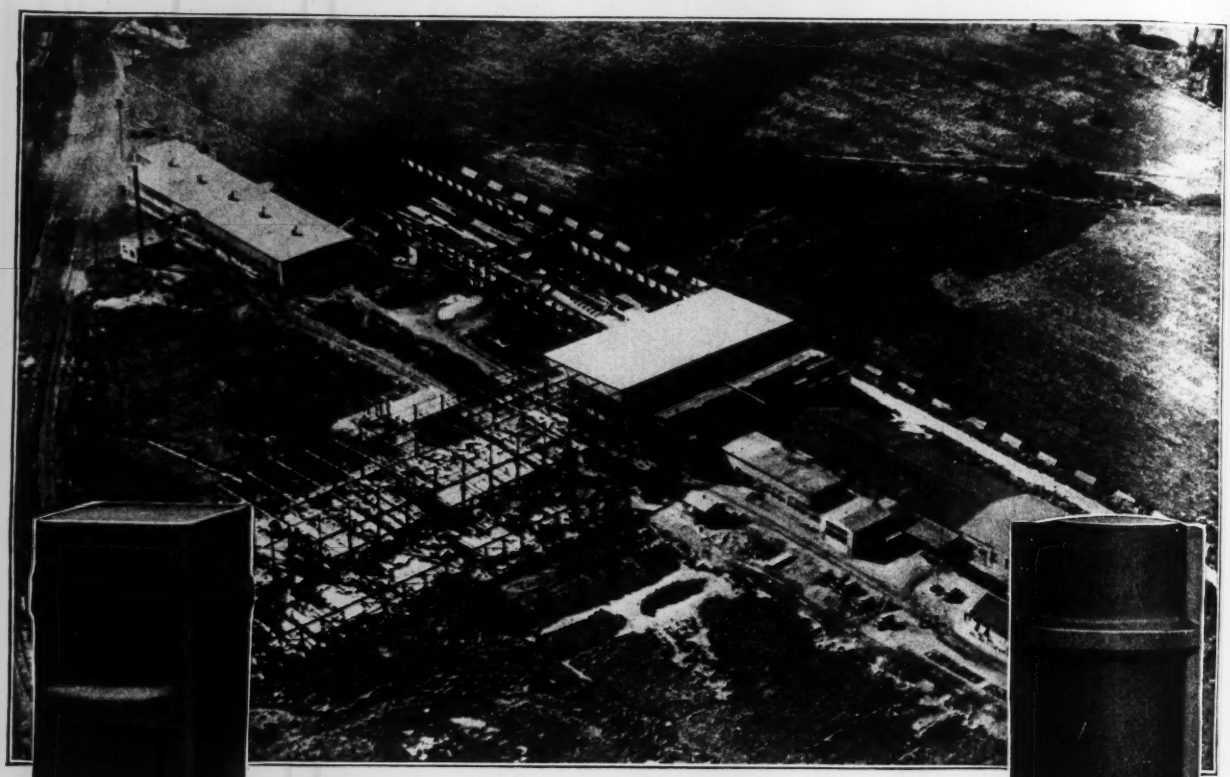
NEW YORK: 140 Cedar Street CHICAGO: 111 West Monroe Street MONTREAL, CANADA: Raymond Concrete Pile Co., Ltd.

Branch Offices in all Principal Cities

"A Form for Every Pile — A Pile for Every Purpose"

RAYMOND

KALMAN STEEL COMPANY
Corrugated Bars



The physical organization behind delivery of reinforcing steel is seldom thought of by the purchaser.

This unusual view of our plant at Buffalo strikingly presents to users of Corrugated Bars the magnitude and substantial nature of handling, storing, and fabricating facilities maintained in the interest of complete and dependable service.

There are eight other Kalman Warehouse units similarly maintained.

KALMAN STEEL COMPANY
CHICAGO

District Sales Offices

Chicago	New York	Cleveland	Buffalo	Detroit
Boston	Pittsburgh	Syracuse	Milwaukee	Philadelphia
St. Louis	Columbus	St. Paul	Atlanta	Dayton
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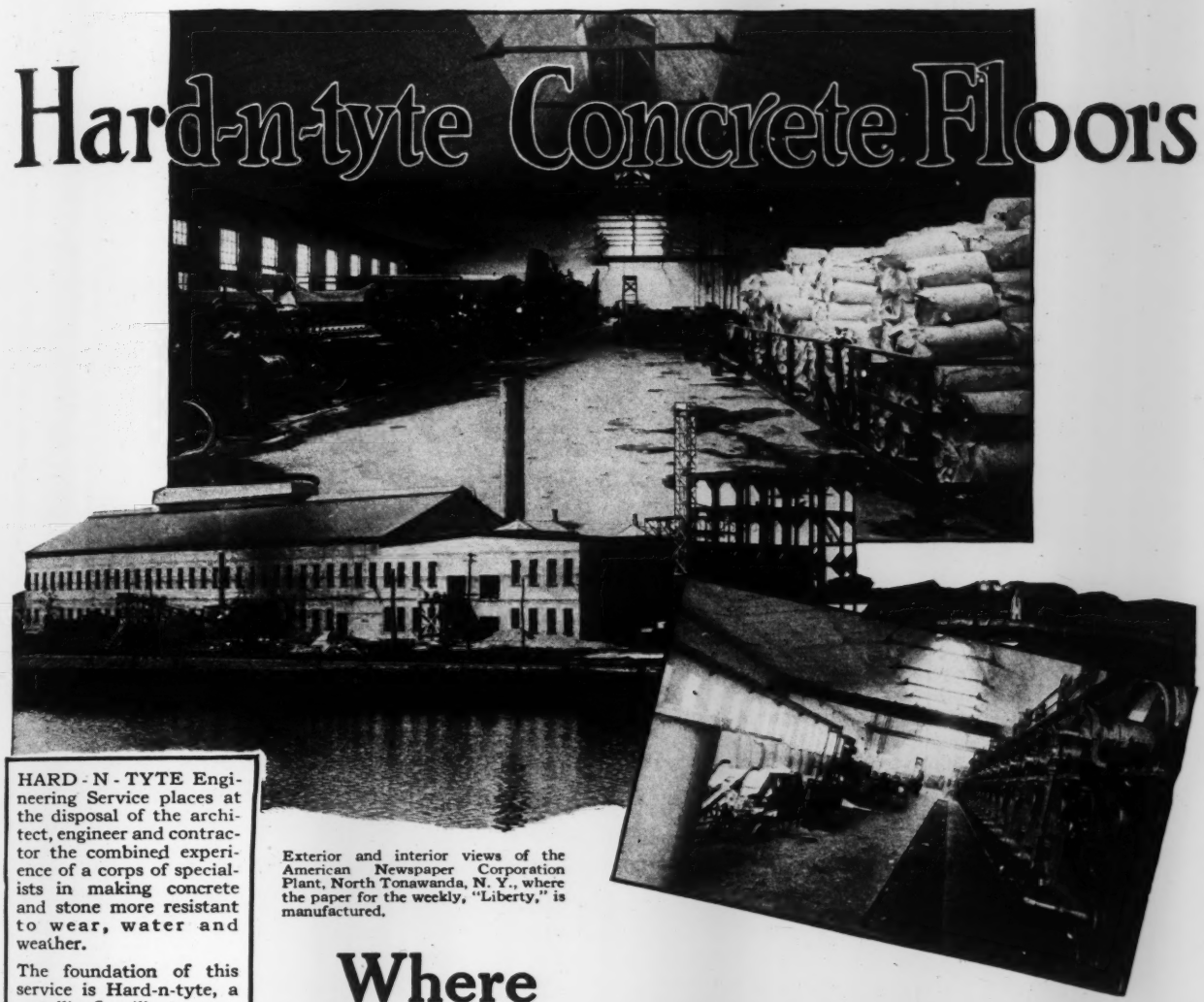
Chicago Buffalo Youngstown New York Boston
Philadelphia Atlanta St. Paul Minneapolis

Hard-n-tyte Concrete Floors



Exterior and interior views of the American Newspaper Corporation Plant, North Tonawanda, N. Y., where the paper for the weekly, "Liberty," is manufactured.

HARD-N-TYTE Engineering Service places at the disposal of the architect, engineer and contractor the combined experience of a corps of specialists in making concrete and stone more resistant to wear, water and weather.

The foundation of this service is Hard-n-tyte, a metallic fluosilicate compound with remarkable properties. Our engineers, however, do not limit their service to the application of Hard-n-tyte but study and apply various chemical compounds manufactured by the General Chemical Company, which best fit the particular problem.

Whether water-, weather-, or wear-proofing, Hard-n-tyte Engineering Service can be of assistance. If any of our compounds can be guaranteed to give satisfaction, they will be recommended—if they cannot, we will be frank in saying so.

Where "Liberty" finds freedom from concrete floor troubles

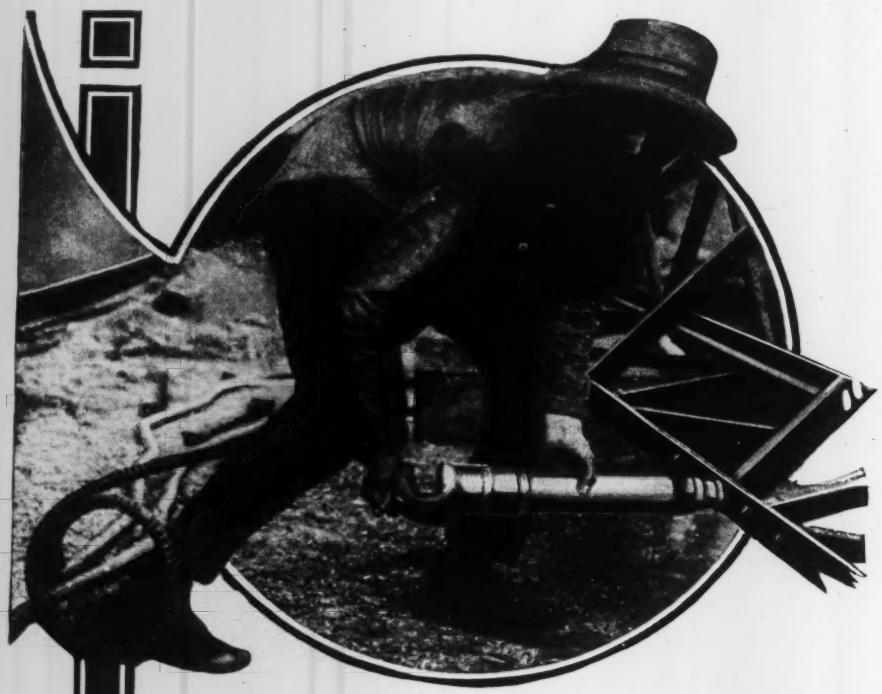
Moisture and constant heavy trucking combine to attack the concrete floors in the plant where the paper for "Liberty" is manufactured. So it was logical that the floor surfaces in this modern mill should be treated with Hard-n-tyte as a protection against disintegration and wear.

The cost-per-square-foot of such protection is surprisingly low. Why not ask our nearest Sales Engineer for a definite quotation?

Hard-n-tyte PRODUCTS for CONCRETE and MORTARS

GENERAL CHEMICAL COMPANY, 40 Rector St., New York

Hard-n-tyte Sales Engineers are located in the following cities: Albany, Buffalo, New York City, Rochester, N. Y.; Baltimore, Md.; Boston, Worcester, Mass.; Chicago, Ill.; Cheyenne Wyo.; Cincinnati, Cleveland, Ohio; Denver, Colo.; Allentown, Harrisburg, Philadelphia, Pittsburgh, Pa.; Indianapolis, Ind.; Kansas City, St. Louis, Mo.; Minneapolis, Minn.; Montreal, Toronto, Canada; Newark, Passaic, Paterson, N. J.; New Orleans, La.; Omaha, Nebr.; Los Angeles, San Francisco, Cal.; Seattle, Wash.; Houston, Tex.; Washington, D. C.; Norfolk, Richmond, Va.; Providence, R. I.; Milwaukee, Wis.



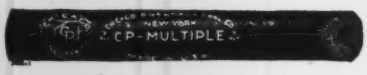
Three-unit construction, ready accessibility of parts for maintenance purposes, speedy driving qualities with a minimum number of rivets to cut out are a few of the reasons why Boyer Hammers are known as "*The World's Standard Wherever Rivets Are Driven.*" Other reasons are given in Bulletin 810 and Special Publication 686. Send for them.

Boyer Riveting Hammers

ARE used by the Dairen Gas Works, Dairen, South Manchuria, when they have gas tanks to build, steel construction work or other riveting operations to perform.

The Dairen Gas Works, in choosing Boyers, offer another example of the many riveting hammer users all over the world who have standardized on the Boyer Hammer as the riveter for their work.

The desirable features of all riveting hammer performance—speed, perfectly driven rivets, economy and dependability—are to be found in each Boyer Riveting Hammer.



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CP Cord, CP Special and CP Multiple Hose is durable, flexible and does not kink easily. Inner tube specially prepared to resist oil. Available in 25 and 50-ft. lengths from any CP Branch House.

Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

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Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
Consolidated Pneumatic Tool Company, Ltd., London, manufacturers of Chicago Pneumatic products in England

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BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS,
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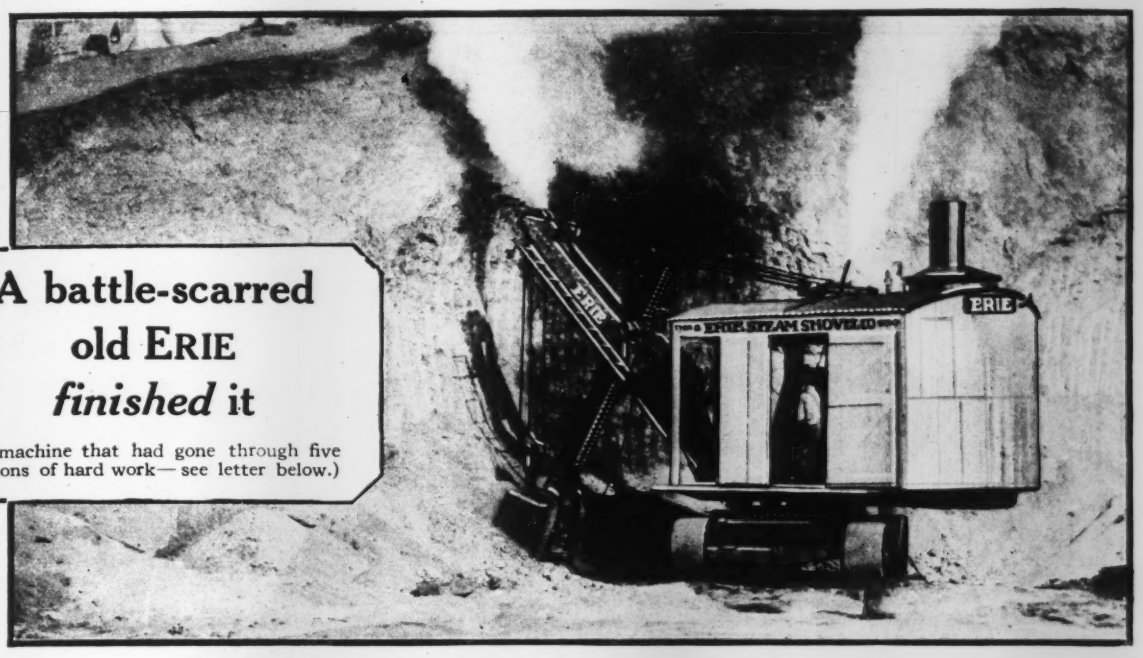
BOYER HAMMERS

The world's standard — *wherever rivets are driven*



A battle-scarred old ERIE *finished* it

(A machine that had gone through five seasons of hard work—see letter below.)

"This work is on Sunset Blvd. in Beverly Hills very close to expensive homes, making it impractical to shoot the bank. The owners tried a shovel they had used on soft jobs but it did not last long when it struck this very hard decomposed granite. They ruined this shovel, and then got one of my old ERIES—No. 1355—which had no trouble digging the hardest of the rock."—*Wm. Ruddock (owner of ERIE Shovels)*, Los Angeles, Calif.

The photo below shows another experience of just the same kind:

"The grading and paving contractor," writes Mr. Ruddock, owns a shovel that is supposed to save you money, but it couldn't get anywhere in this hard stuff. My ERIES went through it so fast that I barely had time to get my fourth one on the job. It was one more good demonstration of what other shovels TRY to do and what ERIE Shovels CAN do.

"Still another friend of mine has one shovel he uses for the SOFT jobs, and keeps an ERIE on his payroll for the REAL work."

Again and again you hear these same reports: ERIES going right in and digging material so hard that the excavation was "stalled" before the ERIE got there.

The reliable shovel that is a *necessity* in hard digging is an *economy* in any digging. ERIES will save ⅔ of your repair expense, AND MAKE A CORRESPONDING SAVING IN YOUR WORKING TIME.

They're doing it for thousands of others (3,200 ERIES in service.)

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.
Incorporated 1883. *Formerly Ball Engine Company*
Builders of ERIE Shovels, Cranes, Ditchers, Draglines, Trench Hoes, etc.
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Representatives throughout the U. S. A.

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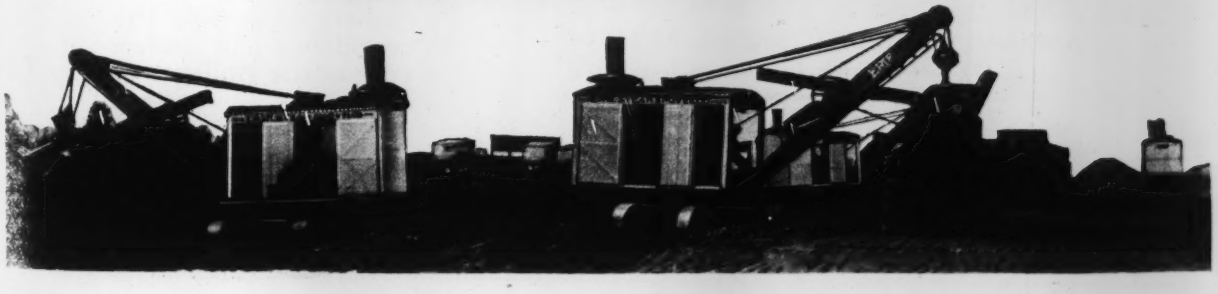
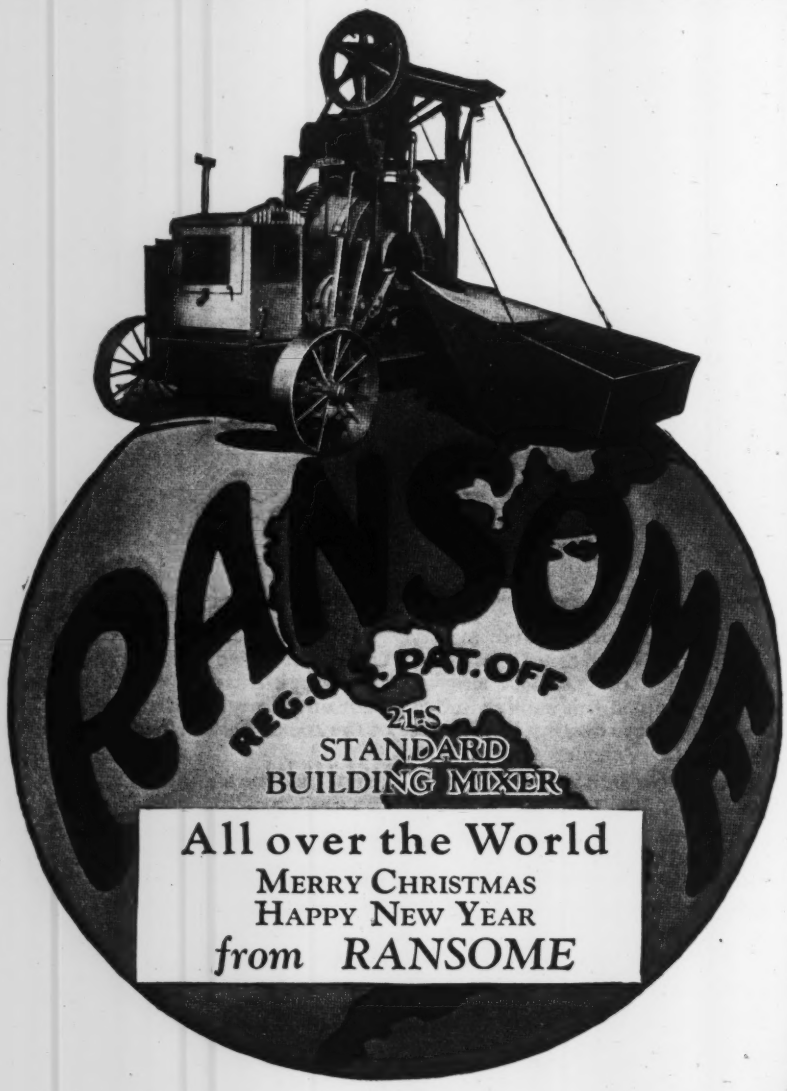




All over the World

MERRY CHRISTMAS
HAPPY NEW YEAR
from RANSOME

THE PIONEER

1850-1924

For three-quarters of a century Ransome Mixers, Ransome Chuting Equipment and Ransome Concrete Machinery have held the confidence and preference of the Builders of America.

RANSOME CONCRETE MACHINERY CO.

1750 Second Street, Dunellen, N. J.

Manufacturers of Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoist Buckets, Bins, Cars, Carts, etc.

7519

RANSOME

A Year's Service—Not a Minute Lost Nor a Single Repair Made

Over a year ago the Bryden Neverslip Company bought a Brownhoist magnet crane. Subjected to continuous usage this crane has never lost a minute's time nor had a repair part put on it.

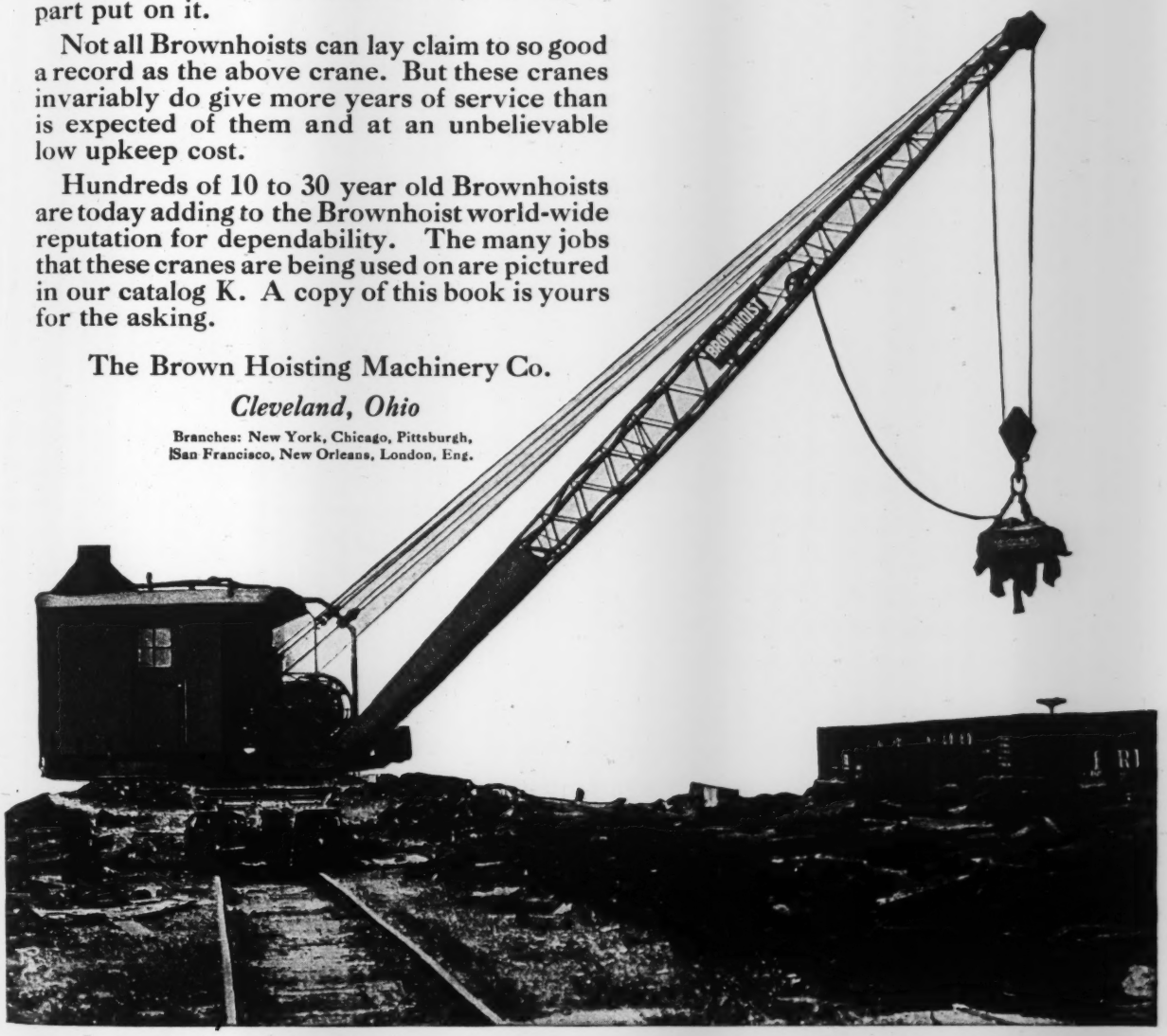
Not all Brownhoists can lay claim to so good a record as the above crane. But these cranes invariably do give more years of service than is expected of them and at an unbelievable low upkeep cost.

Hundreds of 10 to 30 year old Brownhoists are today adding to the Brownhoist world-wide reputation for dependability. The many jobs that these cranes are being used on are pictured in our catalog K. A copy of this book is yours for the asking.

The Brown Hoisting Machinery Co.

Cleveland, Ohio

Branches: New York, Chicago, Pittsburgh, San Francisco, New Orleans, London, Eng.



BROWNHOIST

MATERIAL HANDLING MACHINERY

Permanent roads are a good investment —not an expense

Now is the Ideal Time to Build More Paved Highways

There is not a single community in the United States that does not need a greater mileage of permanently paved roads.

16,000,000 motor vehicles are now using our highways for business and pleasure. They are packing the paved roads in already congested areas, as well as over-running regions until recently considered remote. And they are pounding to pieces all but permanent roads.

Even though a number of states have made good progress in building Concrete Roads, their present permanently improved mileage is entirely inadequate, as every motorist knows.

Meantime, while the building of permanent highways lags, the production of motor vehicles is increasing the present total at the rate of 4,000,000 a year!

Sooner or later this gap must be closed. Why wait?

Not in a long time have general conditions been so favorable for carrying on such public works as permanent highway building, thus assuring tax payers more for their money.

Now is the ideal time to extend both street and road programs!

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Dallas	Jacksonville	Minneapolis	Parkersburg	San Francisco
Birmingham	Denver	Kansas City	New Orleans	Philadelphia	Seattle
Boston	Des Moines	Los Angeles	New York	Pittsburgh	St. Louis
Charlotte, N. C.	Detroit	Memphis	Oklahoma City	Portland, Oreg.	Vancouver, B. C.
Chicago	Indianapolis	Milwaukee		Salt Lake City	Washington, D. C.

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1700 FT. of 2 by 6 to 8 FT. TRENCH IN 8 HOURS

AGAIN, AUSTINS are found on a prominent job. Contract for water pipe extension throughout Grant Park on the Lake Front in Chicago was awarded John-Mariana Co. The South Park Board is pushing the Grant Park Improvement. These AUSTINS are doing their part working steadily. No attempt was made for a record, but the Backfiller filled 1700 feet of trench averaging 2 feet wide and 7¼ feet deep in 8 hours. A TEST of the BACKFILLER'S SPEED showed a fraction over 10 TRIPS PER MINUTE for the scraper. Had this speed been maintained throughout the day the number of lineal feet indicated would have been filled in 5 hours. It takes an AUSTIN to duplicate this reliable, steady, day in and day out, working performance.

Get Catalog B.F.-3 describing this AUSTIN

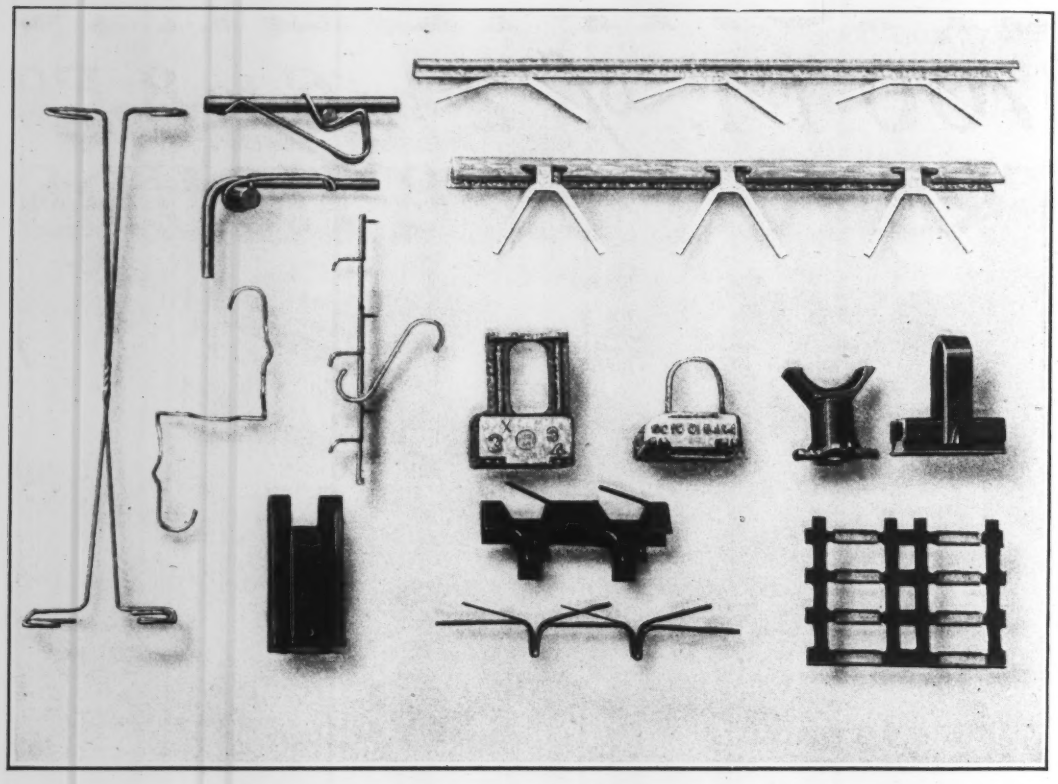
AUSTIN MACHINERY CORPORATION

MAIN OFFICES AND FACTORY

MUSKEGON, MICHIGAN

Distributors in Most of the Principal Cities in the U. S. A.
also at Woodstock and Toronto, Ont., Canada

Havemeyer Specialties



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Bar-Tys
Hy-Chairs
Security Anchor
Easel Chairs

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(Round and Angle Nose)
Inserts
Beam Saddles
Securo Slab Spacers
Sani-Tread

Speed Up Concrete Construction
Keep Every Bar in Its Place
Cut Labor Costs

You can depend upon Havemeyer Service

HAVEMEYER BARS
Rolled Exclusively From
NEW BILLET STEEL

Concrete Steel Company

42 Broadway, New York City

Sales Offices and Warehouses in Principal Cities

The Parsons Company wish you all a merry Christmas and a happy New Year

Since the War Models

Model 18 Excavator
Model 30 Excavator
Model 40 Excavator
Model 20 Backfiller

And especially are we grateful to a large and happy and contented group of contractors for one of the best years in the history of The Parsons Company.

And we are happy because our success is only a small indication of your success with the Parsons Trench Excavators and Backfillers which we have developed since the war. We built them as well as we knew how and you proved them to be the best trenching machines ever developed.

THE PARSONS COMPANY
NEWTON, IOWA, U. S. A.
Chicago, 11 S. La Salle St. New York, 145 Centre St.
Kansas City, 1737 Walnut St.
Agents in All Principal Cities
MUSSEN'S LIMITED,
SOLE DISTRIBUTORS IN CANADA—
Montreal, Toronto, Winnipeg, Vancouver

Austin Leaning Wheel Graders

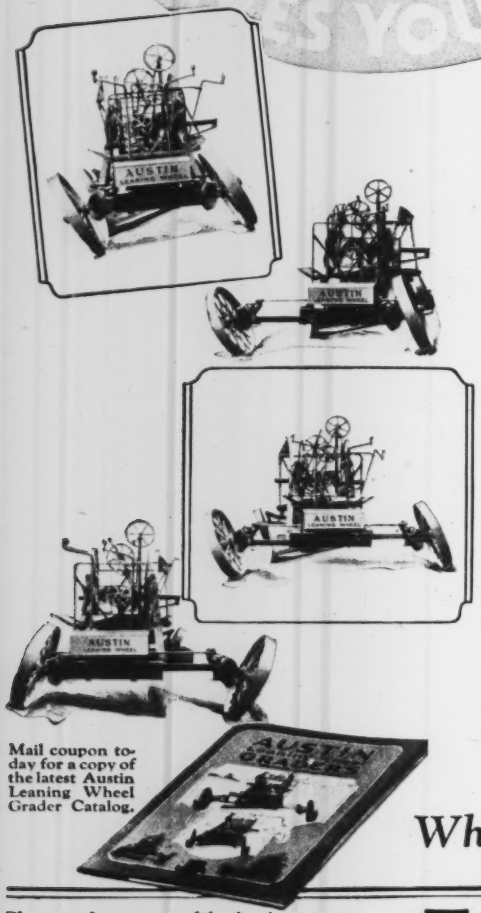
The time-tested features that have made Austin Graders the choice of experienced operators for over 40 years will all be found on the Leaning Wheel models. In addition, they are distinguished from all other Leaning Wheel graders by several improvements of great practical value. The Telescopic Rear Axle, Timken Tapered Roller Bearings and Alemite High Pressure Lubricating System are exclusive features whose value will be admitted by all impartial authorities.

The advantages of the telescopic axle are obvious. It is never in the way as a long, one-piece axle is very apt to be, and when fully telescoped has the further advantage of being much stronger than any long axle can hope to be.

Timken Tapered Roller Bearings are dust-tight and have many mechanical advantages over all other types. No other bearing is designed to stand the variable loads, or pressure, to which all grader wheels are subjected, and no other type can be taken up for wear instead of replaced.

The Alemite High Pressure Lubricating System is standard equipment on more than 250 automobiles, trucks and tractors. Its chief advantage is the fact that lubricant is forced into all bearings under a pressure of several hundred pounds to the inch, thus reaching every part of the wearing surface, and at the same time forcing out all foreign matter.

The Telescopic Rear Axle, Timken Bearings and Alemite Lubricating System are but three of the things that contribute to Austin superiority.



Mail coupon today for a copy of the latest Austin Leaning Wheel Grader Catalog.

Why take less in a leaning wheel machine?

Please send me a copy of the Austin Leaning Wheel Grader Catalog.

_____

_____

_____

THE AUSTIN-WESTERN ROAD MACHINERY CO.

CHICAGO

For the sixth consecutive year the world's largest plant devoted exclusively to the manufacture of paving mixers has been kept busy building only two sizes of MultiFoote Pavers.

1924

Shipments of 14E and 21E MultiFoote Pavers during the six months just ending have actually increased over the previous year in the face of a falling off in road building activities in the last half of the year.

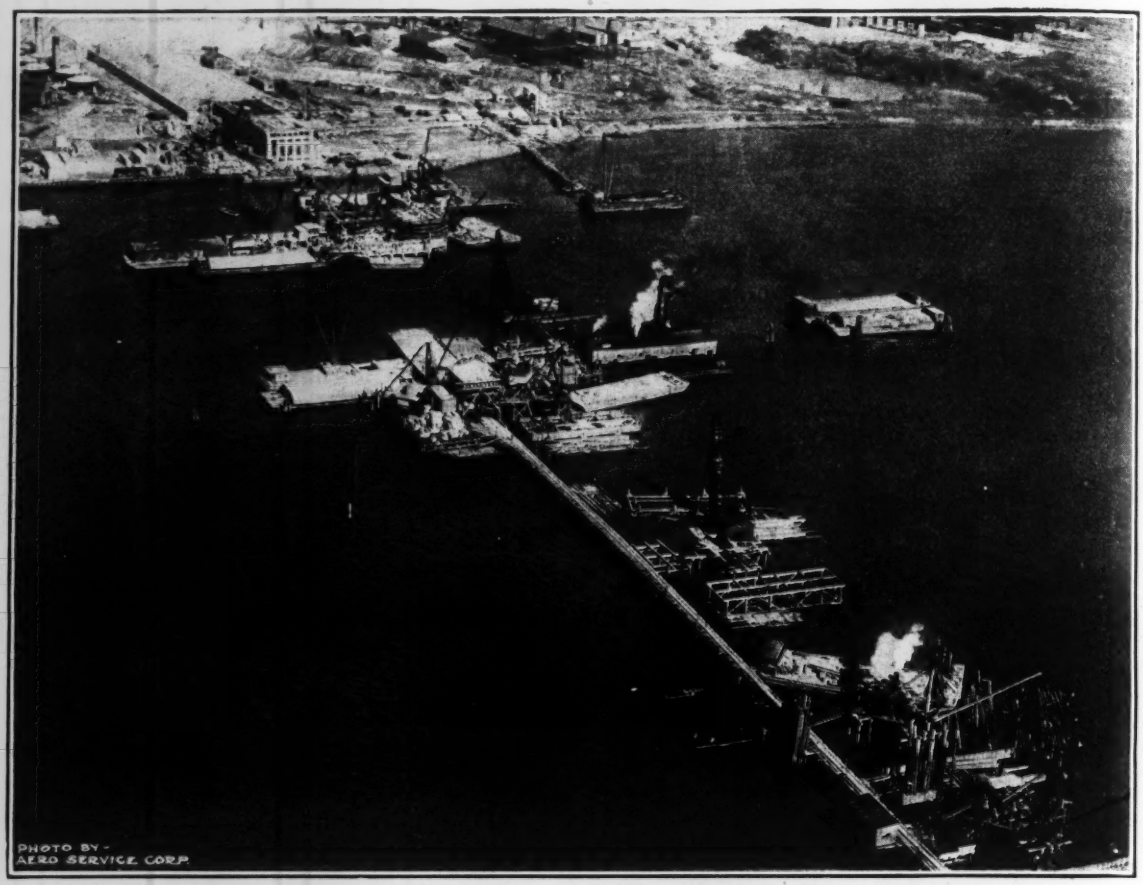
1925

The MultiFoote is "known by the company it keeps" and the slogan of the Foote organization and its pledge of service for the coming year, as in the past, will be "To improve and to be improved by the company we keep."

The Foote organization consists of the Factory and five General Distributors

THE FOOTE COMPANY, INC.
NUNDA, NEW YORK

FOOTE CONCRETE MACHINERY CO., *Chicago* · Western States
WILCOX BROTHERS, INC., *New York* · Eastern States
E. J. McHARG & COMPANY, *Binghamton* · Middle States
BURTON FRANKLIN, *Chattanooga* · Southern States
EDWARD R. BACON COMPANY, *San Francisco and Los Angeles* · Pacific Coast



Airplane View of State Highway Bridge Piers. Perth Amboy, N. J.
River Piers being built by The Foundation Company

The new $4,000,000 Highway Bridge across the Raritan River at Perth Amboy, New Jersey, will be an essential part of one of the most important traffic arteries leading out of New York. The Foundation Company is building the six river piers by means of the pneumatic caisson method. This operation involves the sinking of at least one of the caissons to a depth of 115 feet—greater than any yet attained in bridge foundations in America.

THE FOUNDATION COMPANY

CITY OF NEW YORK

Office Buildings
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants

ATLANTA
CHICAGO
PITTSBURGH
MONTREAL
SAN FRANCISCO
LOS ANGELES
LIMA, PERU
CARTAGENA, COLOMBIA
LONDON, ENGLAND
PARIS, FRANCE
LOUVAIN, BELGIUM
MEXICO CITY

Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Bridges and Bridge Piers
Mine Shafts and Tunnels

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

BYERS "BEAR CAT" CRANE

The Sensation of the 1925 Road Show

– not a prediction but a *promise!*

BYERS "BEAR CAT"

The "Bear Cat" skimmer is an effective and economical grader.

Here it is shown with ditcher attachment working on a 30 degree grade.

The "Bear Cat" makes fast work of backfilling with this attachment.

BYERS "BEAR CAT" is a compact, powerfully built crane with a 40 h.p. gasoline motor, handling several different attachments especially designed for this machine. The skimmer scoop, pictured above, makes a most effective road grader, capable of tough and extensive digging.

On one job recently, it broke its way through hard macadam that had been oiled for years until it was practically like hard pan, and loaded 200 yards per eight-hour day. In another case, it averaged sixty yards an hour, considerably more than the contractor was able to load with a ½ yard steam shovel.

This skimmer has a 12-foot crowd and develops a tremendous pressure at the bucket lip. A good high swing can be made to permit dumping from subgrade into trucks on a higher level. The exceptionally rugged steel construction of this whole machine enables it to withstand the hardest usage and to keep working day after day without expensive breakdowns and delays.

No fireman, no ground man — the "Bear Cat" is operated by *one man*. The bucket trips from the cab and locks again automatically. Think what that means in low operating cost. This feature applies to every attachment.

BYERS

The All-Purpose Light Crane

See how it moves right up into the soft dirt on its full caterpillar treads.

The full caterpillar mounting gives traction and stability on all kinds of ground, no planking or outriggers of any kind being used. It can mount a trailer on its own power and be hauled anywhere at motor truck speed.

Equipped with clamshell boom and bucket, the "Bear Cat" handles material or does ordinary digging at a speed that puts it literally in a class by itself. We believe it is easily the fastest crane on the market today, but we are always glad to have interested parties time it and judge for themselves.

The "Bear Cat" with ditcher attachment has made remarkable records of speed, economy and endurance at sewer and water main work all over the country. The backfiller attachment operates on the same boom and makes speedy work of backfilling after the pipe is laid.

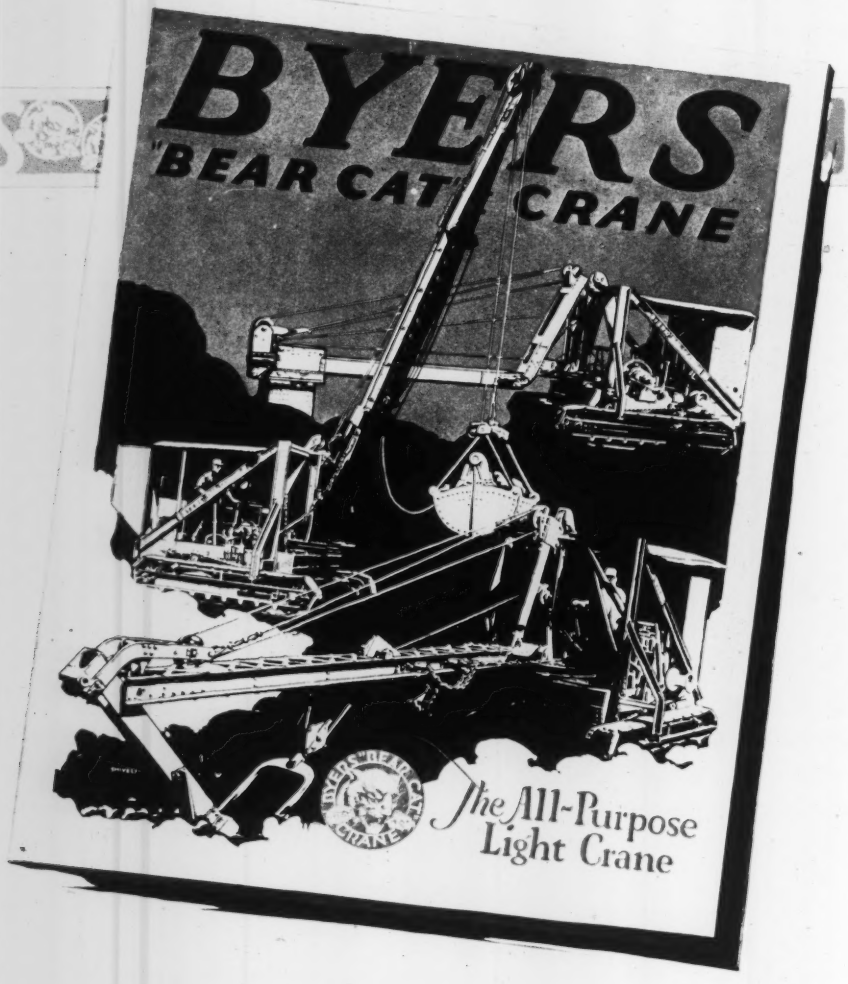
The shovel attachment provides an effective tool for general excavating, while dragline, magnet, and other standard attachments complete the "Bear Cat's" range of usefulness.

This machine need never be idle, for if not busy at road work, it can be easily adapted to material handling, ditching, excavating, etc. Attachments are all quickly interchangeable.

With this attachment the "Bear Cat" performs the operations of a steam shovel.

The "Bear Cat's" rugged construction makes it a very good machine for dragline work.

CRANES



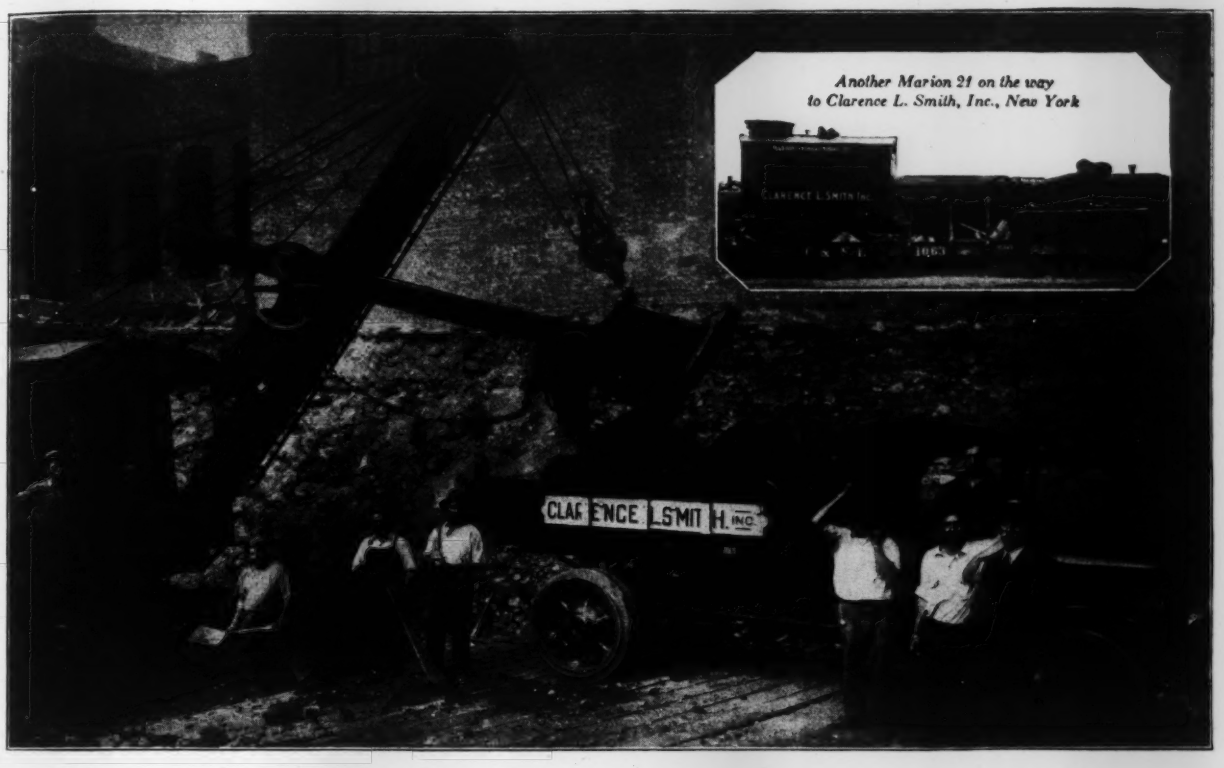
THAT Byers "Bear Cat" is the outstanding development of 1924 in the field of road building machinery, we believe you will readily agree when you see this remarkable machine with its various attachments.

Thousands will see the big Byers exhibit at the Road Show, and will have full opportunity to inspect these Model 25 "Bear Cats." The many readers of this magazine who are interested but who do not attend the Road Show, will find in the big 48 page book illustrated above, which is just off the press, interesting descriptions, splendid photographs and full specifications of the "Bear Cat."

Write and ask us for a copy

The Byers Machine Company

250 Sycamore Street Ravenna, Ohio



Digging in Gotham

CUT mostly from solid rock, the excavating for many of Manhattan's largest structures has been handled exclusively by Marions owned and operated by Clarence L. Smith, Inc., New York City. Below is a partial list of buildings for which foundations have been built by Clarence L. Smith, Inc., in the past 36 years.

B. Altman & Co. Store
Astor Trust, 24th St. & 5th Ave.
Bloomingdale Store
Bonwit Teller & Co. Bldg.
Capital Theatre
Cunard Steamship Company Bldg.
42nd St. & Madison Ave. Bldg.
Hotel Martinique Addition
Knickerbocker Trust Co. Bldg.
Knickerbocker Hotel
Marbridge Bldg.
Metropolitan Life Ins. Bldgs.
McAlpin Hotel Addition
National Cloak & Suit Co.
New York Custom House
Park & Tilford, 24th & 43rd Sts.
Pictorial Review Bldg.
Sherry Hotel
Stern Bros., 42nd & 43rd Sts. & 6th Ave.
St. Regis Hotel Addition
Times Annex
U. S. Rubber Co. Bldg.
Union Theological Seminary Bldg.

The Marion Steam Shovel Company
Marion, Ohio

Marion Power Shovels

2417

Insley Concrete Placing Equipment

INSLEY

CONCRETE PLACING EQUIPMENT

STEEL DERRICKS

BUCKETS AND CARS

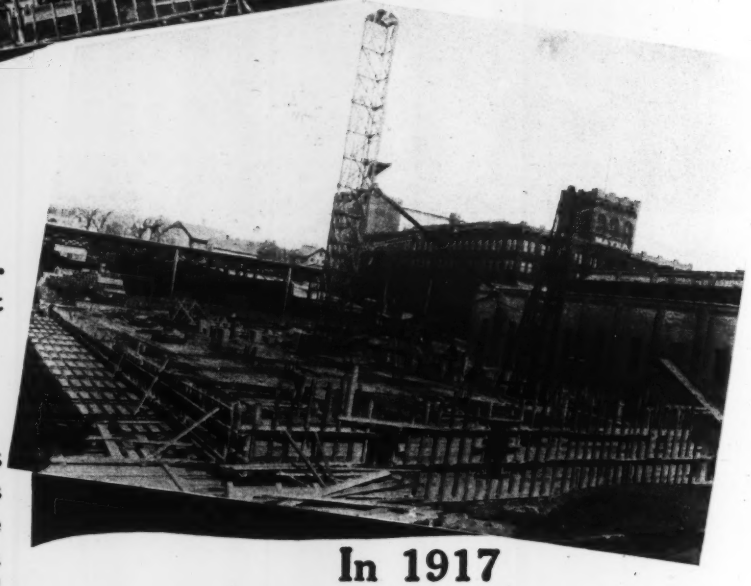
EXCAVATING EQUIPMENT

In 1914

O'Rourke Brothers, Norristown, Pennsylvania, bought this Insley Steel Tower.

In 1924

***it is still in operation,* is as good as new, and is on its ninth job. It has cost the owners nothing except for a few bolts and occasional repainting.**



In 1917

W. W. Oeflein, Milwaukee, Wis., bought this Insley Steel Tower.

In 1924

***it has poured over thirty jobs,* and is still going strong. This contractor has had two others for five years, during which time all of them have paid for themselves many times over.**

There is no better proof

that Insley Steel Towers

are permanent equipment.

INSLEY MANUFACTURING CO.

Engineers **INDIANAPOLIS, IND.** **Manufacturers**

428

Rideability and Reputation

The motoring public judges the new road **by its surface.** If it does not ride smoothly, everybody knows and calls the entire job "bad."

Careful design, good materials, and the conscientious carrying out of construction details **cannot be appreciated** by the riding public if the finished surface of the road is wavy.

The first requirement for an even surface is ROAD FORMS which cannot be depressed by the finishing machine or strike-off template. The ends of these forms must be securely and rigidly interlocked.

Showing the BLAW-KNOX Lock Joint supporting a load of 1,350 pounds. No ground support is needed. No finishing or subgrading machine can deflect the BLAW-KNOX Form at the joint.

Blaw-Knox Road Forms

with their staking system and lock joint connection

are the best insurance for a smooth road and favorable PUBLIC OPINION

BLAW-KNOX COMPANY

601 Farmers' Bank Bldg., PITTSBURGH, Pa.

NEW YORK—30 E. 42nd St.
BALTIMORE—Bayard and Warner Sts.
BIRMINGHAM—Brown-Marx Bldg.
CHICAGO—Peoples Gas Bldg.
DETROIT—Lincoln Bldg.
BUFFALO—Genesee Bldg.
LONDON, ENG., Caxton Bldg.

BLAW-KNOX
ROAD BUILDING EQUIPMENT

Batcherplants

Universal Forms

Turntables

Clamshell Buckets

Cement Handling System

OTHER BLAW-KNOX PRODUCTS

STEEL FORMS For Concrete Construction
INUNDATION METHOD
CLAMSHELL BUCKETS
STEEL BUILDING (Sectional)
TRANSMISSION TOWERS
STRUCTURAL STEEL
PLATE WORK
WATER-COOLED APPLIANCES For High Temperature Furnaces
SHEET and TIN and STRIP and WIRE MILL EQUIPMENT
FORGE and HAMMER WELDING

3,000,000 lbs. pressure

The photograph shows a steel column test in the testing laboratory of the Bureau of Standards. The big testing machine is of 10,000,000 pounds capacity. The steel column, a 23½ ft. solid rolled H-section, withstands 3,063,600 pounds total loading before failing.

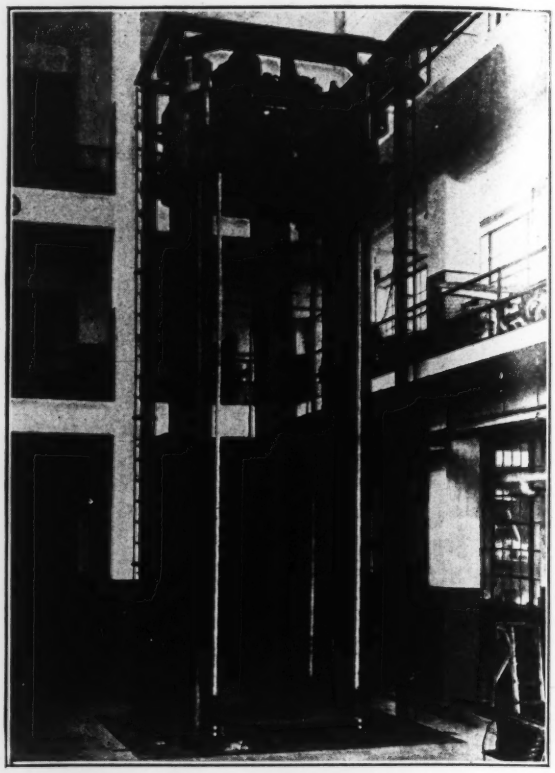
Columns crumple and beams bend as tests similar to this go on to determine accurately the strength of steel. For the engineer must work on facts derived from actual tests.

Paint also is tested

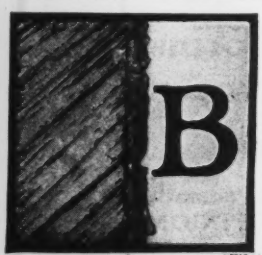
Just as such experiments determine the strength of steel, so paint tests prove over and over again to the engineer the value of red-lead in protecting steel against rust. No matter how strong steel is, rust can soon eat into it if it is left unprotected.

The American Society for Testing Materials conducted the Havre de Grace bridge test to find the best paint for safeguarding exposed metal surfaces against rust. The test lasted eight years. It proved that a high-grade red-lead paint gives the best protection against air and moisture. The high-grade red-lead paint outlasted all other paints used.

Nearly twenty millions pounds of red-lead are used each year in this country to safeguard metal against rust. Yet this is not enough. The use of more red-lead would repay its cost ten times over. For, in 1922, the estimated total damage caused by rust *was greater than the damage caused by fire.*



"A"—WITHOUT RED-LEAD. The microscope shows what rust does to an unprotected metal surface in a comparatively short time. Note the deep-rooted incrustation.



"B"—WITH RED-LEAD. Here the microscope shows a metal surface protected by the standard three-coat covering of red-lead. Note the perfect condition of the metal surface.

The diagonal lines are file marks made in preparing the specimen cross sections for the microscope.

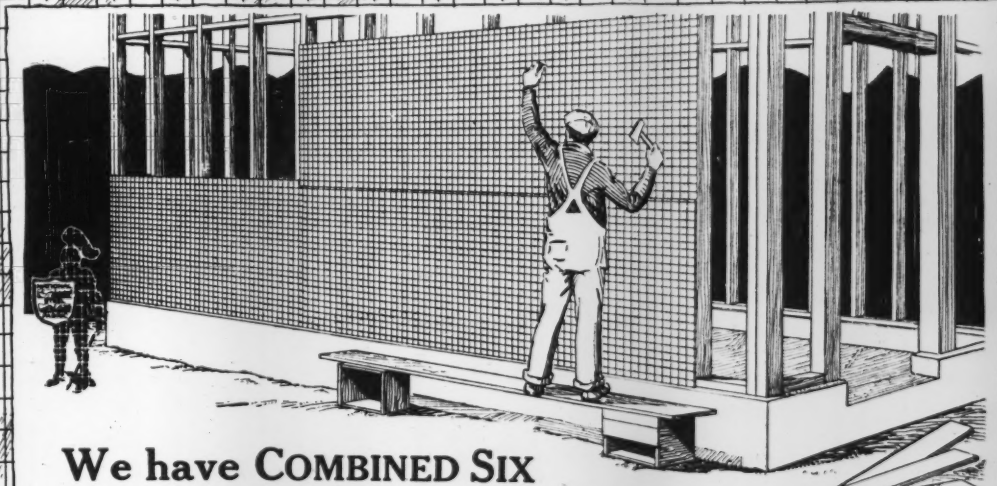
Being pure red-lead, Dutch Boy red-lead gives complete protection against rust to all metal surfaces. Being high-grade red-lead, Dutch Boy red-lead spreads evenly under the brush and has unusual covering capacity. A coating of Dutch Boy red-lead sticks tight to clean metal and does not crack or scale.

Dutch Boy Red-Lead

Dutch Boy red-lead is obtainable in paste and also liquid form. The *paste* comes in the natural color and can be shaded to browns, greens, black, etc. The *liquid* comes in the natural color and also shaded to light and dark brown, light and dark green, and black for finishing coats. For specific information on protective paint coatings, address our branch office nearest you.

NATIONAL LEAD COMPANY

New York, 111 Broadway; Boston, 131 State Street; Buffalo, 116 Oak Street; Chicago, 900 West 18th Street; Cincinnati, 659 Freeman Avenue; Cleveland, 820 West Superior Avenue; St. Louis, 722 Chestnut Street; San Francisco, 485 California Street; Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue; Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street.



We have COMBINED SIX BUILDING MATERIALS into ONE

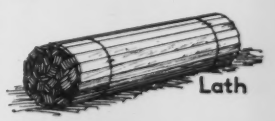
National Steel Fabric Style P-214 is not a *substitute*—

It is a combined base and *reinforcement,* which not only unites sheathing, building paper, furring strips, lath, reinforcement, and nails into *one* building material, but also assures stronger, monolithic, more permanent, more firesafe, and (which is most gratifying) less costly and "back-plastered" construction.

Style P-214 is used for plaster walls and ceilings and stucco walls, also for cement, composition, and tile porch and bathroom floors.

On all your jobs, be sure to *reinforce* all concrete, plaster and stucco with National Steel Fabric.

Send for our new free catalog, and book, "Building a Permanent Home."



National Steel Fabric Co.

(Subsidiary of Pittsburgh Steel Co.)

700 Union Trust Bldg., Pittsburgh, Pa.

OFFICES: Atlanta, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Los Angeles, New York City, Philadelphia, Pittsburgh, Rochester, St. Louis, San Antonio, San Francisco.

STOCKS: Chicago, Houston, Los Angeles, New York, Cleveland, Pittsburgh, San Francisco, Detroit.

NATIONAL STEEL FABRIC CO

KEYSTONE COPPER STEEL

EXTEND your business by using sheet metal products that have an established reputation for quality, durability and general trustworthiness.

Steel Sheets and Tin Plates

Let us quote you on American Bessemer, American Open Hearth, and Keystone Copper Steel rust-resisting Black and Galvanized Sheets, Special Sheets, Roofing Terne Plates, Bright Tin Plates, Black Plate, Etc.,—products that reflect the highest standards of excellence, and meet in the most economical and satisfactory manner the demands of the consuming trades.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:

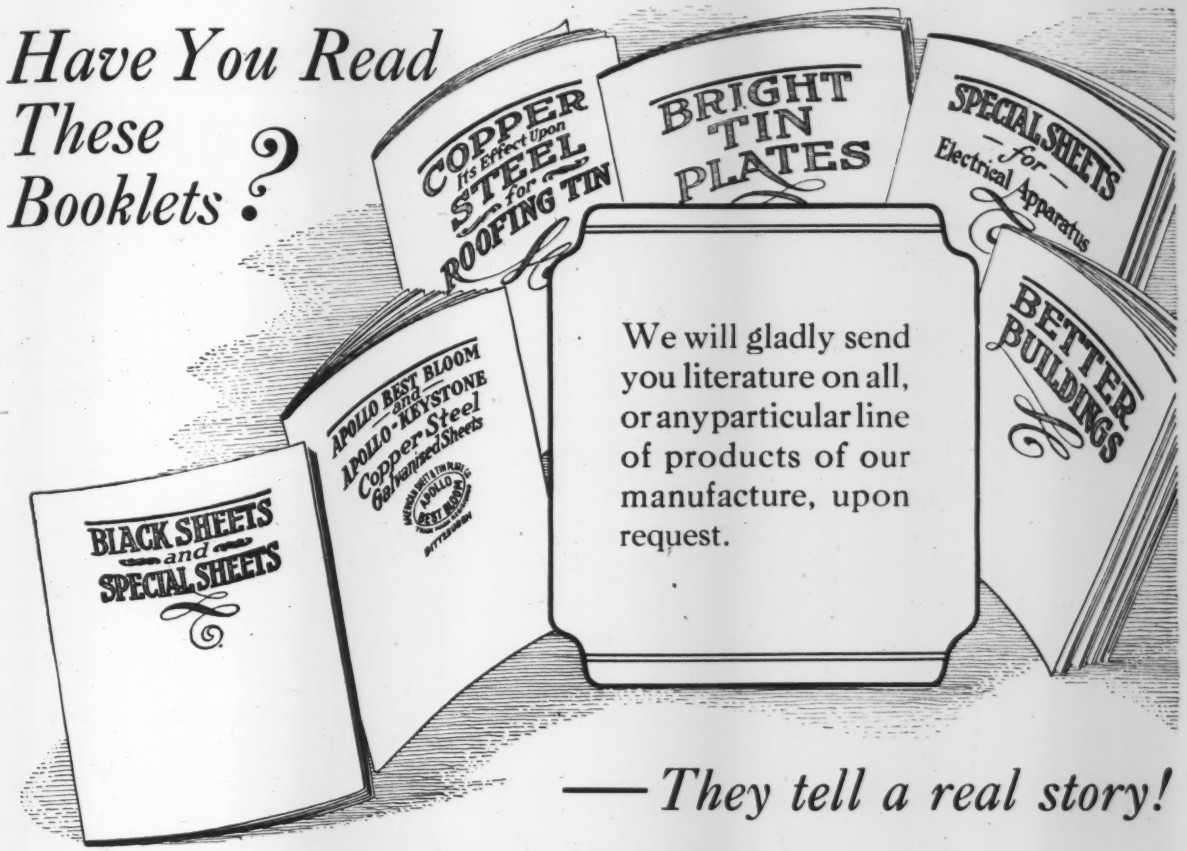
Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, 30 Church St., New York City; 36-38 New Broad St., London, E. C.

KEYSTONE COPPER STEEL

Have You Read These Booklets?


COPPER STEEL For ROOFING TIN
BRIGHT TIN PLATES
SPECIAL SHEETS For Electrical Apparatus
BETTER BUILDINGS
APOLLO BEST BLOOM and APOLLO-KEYSTONE Copper Steel Galvanized Sheets
BLACK SHEETS and SPECIAL SHEETS
We will gladly send you literature on all, or any particular line of products of our manufacture, upon request.

—They tell a real story!

The brands of this Company have a recognized standing wherever sheet metals are used. Steadfast adherence to the best methods of producing Steel Sheets and Tin Plates has maintained leadership for our products through the years.

Whatever your requirements in our line—we can supply them with accuracy and dispatch. Sold by leading metal merchants. We are pleased to assist engineers and contractors with their sheet metal problems. Address nearest District Sales Office.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

MANUFACTURERS OF

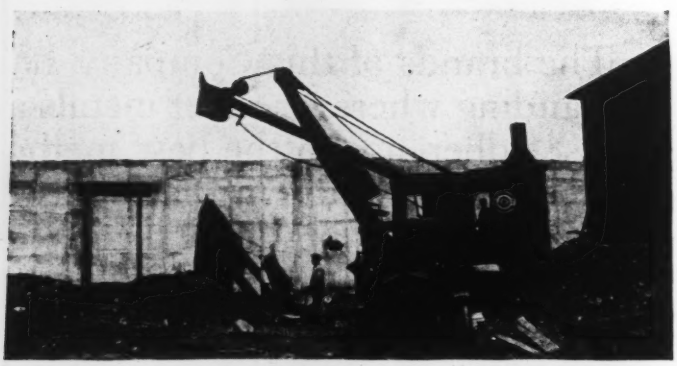
Sheet and Tin Mill Products for all purposes—Black Sheets, Galvanized Sheets, Tin and Terne Plates, Special Sheets for Stamping, Corrugated and Formed Roofing and Siding Materials, Electrical Sheets, Wellsville Polished Steel Sheets, Automobile Sheets in all grades, Deep Drawing Sheets, Culvert and Flume Stock, Black Plate, Etc.

It Is All You Claim For It—

"We have had this shovel about two and one-half years — should we ever be able to help you convince a prospective customer that it is everything you claim for it we will be pleased to have the opportunity — one day last month we loaded 172 five-ton trucks in nine hours, excavating for the City Garbage Disposal Plant at 140th Street and 5th Ave.

We consider this a record, but averaged over 150 loads every day.

(*Signed*) *Utilities Contracting Co. Inc.*
Brooklyn, N. Y. "



This is a 20-B ¾-yd. Bucyrus

The only Revolving Steam Shovel with Outside Sticks, Two-part Hoist, Scale Chamber Boiler, Etc.

Send for Bulletin C-201-N

BUCYRUS

Established in 1880. A Special Plant Devoted Exclusively to Small Revolving Shovels

Railroad Type and Revolving Shovels of All Sizes, Dragline Excavators, Trench Excavators, Dipper, Hydraulic and Placer Dredges, Spreader Plows, Wrecking Cranes, Etc.

Bucyrus Company, South Milwaukee, Wisconsin

New York Chicago Birmingham San Francisco Portland Denver Tokyo London

20-B — ¾-yard.
30-B — 1-yard.
50-B — 1¾-yard.
Steam, Diesel, Gas, Electric.
Also as Draglines; Cranes, etc.

632

A good place to meet your friends while at the Good Roads Show will be the OSGOOD Exhibit Booth No. 32.

We will be glad to have you make our Booth your headquarters. Bring your friends and rest with us. And while you are with us we would like to have you look over the points of interest on an OSGOOD. You will find it educational and perhaps profitable

Remember the date---January 5th to 9th, 1925.

Booth No. 32.

The Coliseum, Chicago.

The OSGOOD Company

OSGOOD

Marion·Ohio

TELSMITH

FOR BETTER AND CHEAPER ROADS

We can't insure you against **all** the risks, incidental to the completion of a road construction job; but Telsmith eliminates many of them as follows:

(1) The steel structure of the Telsmith Mounted Breaker insures you against any serious break-down of the crushing plant.

(2) The portability of the plant solves all transportation problems.

(3) The big feed openings and "parallel pinch" insure big capacity, low quarrying and crushing costs.

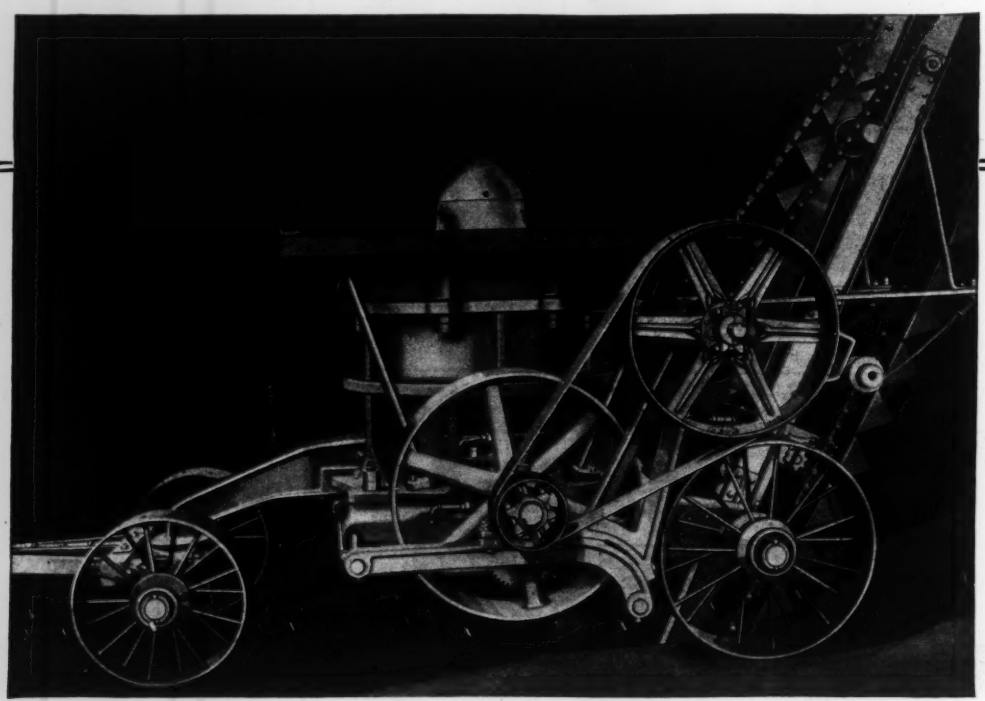
(4) The circular discharge opening and gyratory crushing stroke insure a well cubed product, containing but few thin, weak slabs. With Telsmith on the job, many of the "ifs" are eliminated from the contractor's calculations. Then why not put Telsmith where he can work for you? Glad to send you Telsmith Bulletin No. 1M1. No obligation.

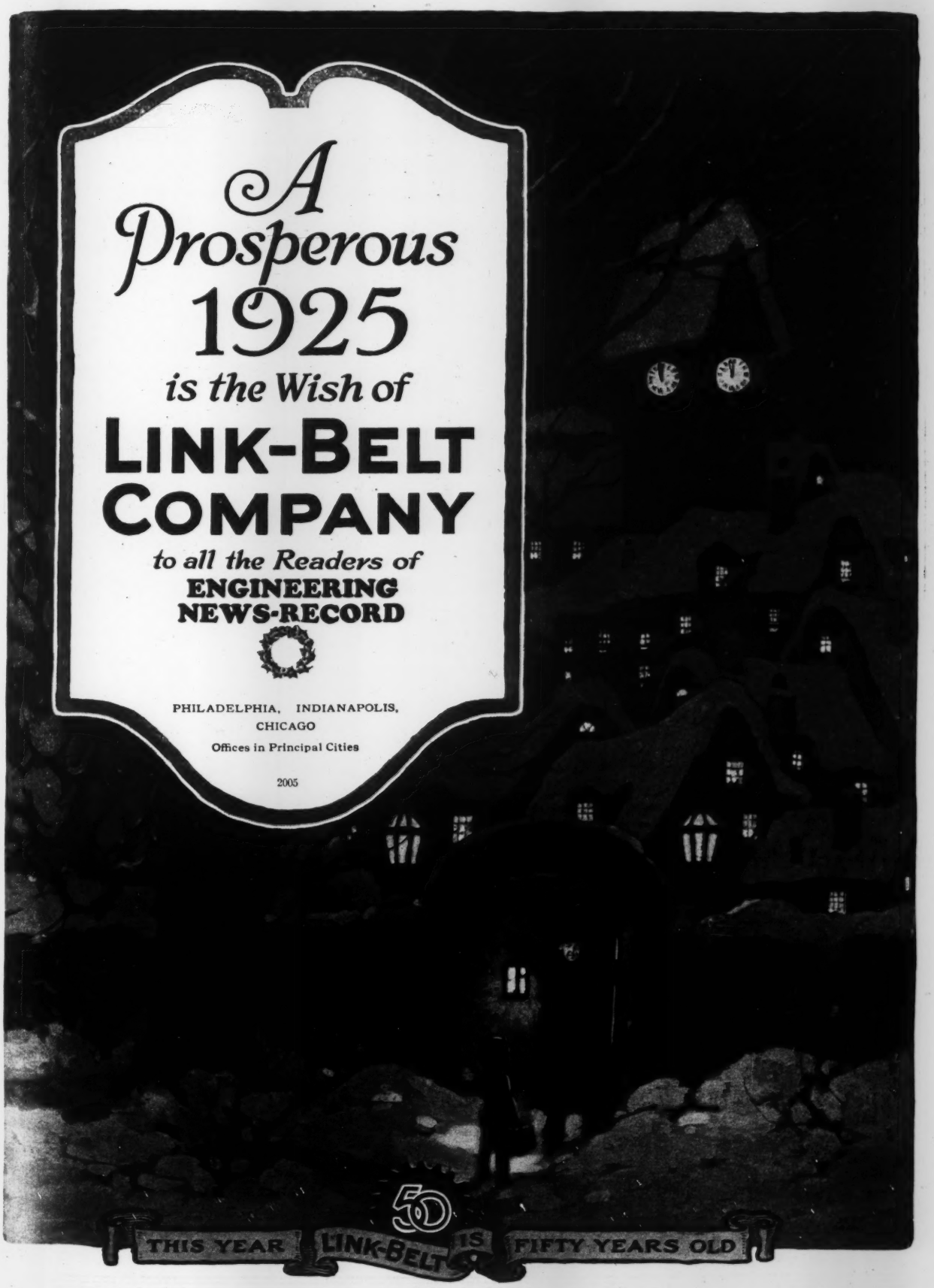
SMITH ENGINEERING WORKS

3198 LOCUST ST., MILWAUKEE, WIS.

Canadian Representatives:
Canadian Ingersoll-Rand Co., Montreal, P. Q.

Old Colony Bldg. Chicago, Ill.
18 E. 41st St. New York City
816 Otis Bldg. Philadelphia, Pa.
110 W. Park Way, N.S. Pittsburgh, Pa.
141 N. Front St. Columbus, O.
325 W. Main St. Louisville, Ky.
2540 University Ave. St. Paul, Minn.
Franklin and Channing Aves., St. Louis, Mo.
Bunting Hardware Co. Kansas City, Mo.
J. W. Bartholow Co. Dallas, Tex.
Alamo, Iron Works San Antonio, Tex.
523 Boston, Bldg. Denver, Colo.
Salt Lake Hdw. Co. Salt Lake City, Utah
625 Market St. San Francisco, Calif.
Brown, Bevis Co. Los Angeles, Calif.
Road Builders Eq. Co., Portland, Ore.




A Prosperous 1925
is the Wish of
LINK-BELT COMPANY
to all the Readers of
ENGINEERING NEWS-RECORD
PHILADELPHIA, INDIANAPOLIS, CHICAGO
Offices in Principal Cities
2005
50
THIS YEAR LINK-BELT IS FIFTY YEARS OLD

Independent Reinforced Concrete Pipe was selected for extensive improvements in Oakland County, Michigan, because the officials recognized its lasting qualities. The above protograph indicates clearly the advantages of using Independent Reinforced Concrete Pipe. Trenches are cut to actual size—there are no flaring bell ends and Independent Reinforced Concrete Pipe installations are easily made, whether for straight line trench or for curves.

Strength Durability Dependability built in every foot

Wire—Write or Phone for Prices

INDENPENDENT Reinforced Concrete Pipe has shown so many advantages for use in sewer improvements that today it occupies a position in the field of sewer construction material that is justly warranted. Its strength, durability and dependability are a few of the many advantages that Independent Reinforced Concrete Pipe is endowed with.

"The prominence of Independent Reinforced Concrete Pipe in the sewer construction field is well deserved. Its permanence is unquestionable. The contractor can build larger profits by using Independent Reinforced Concrete Pipe—the Engineer can depend upon its service."

Independent Concrete Pipe Co.

Indianapolis, Ind.

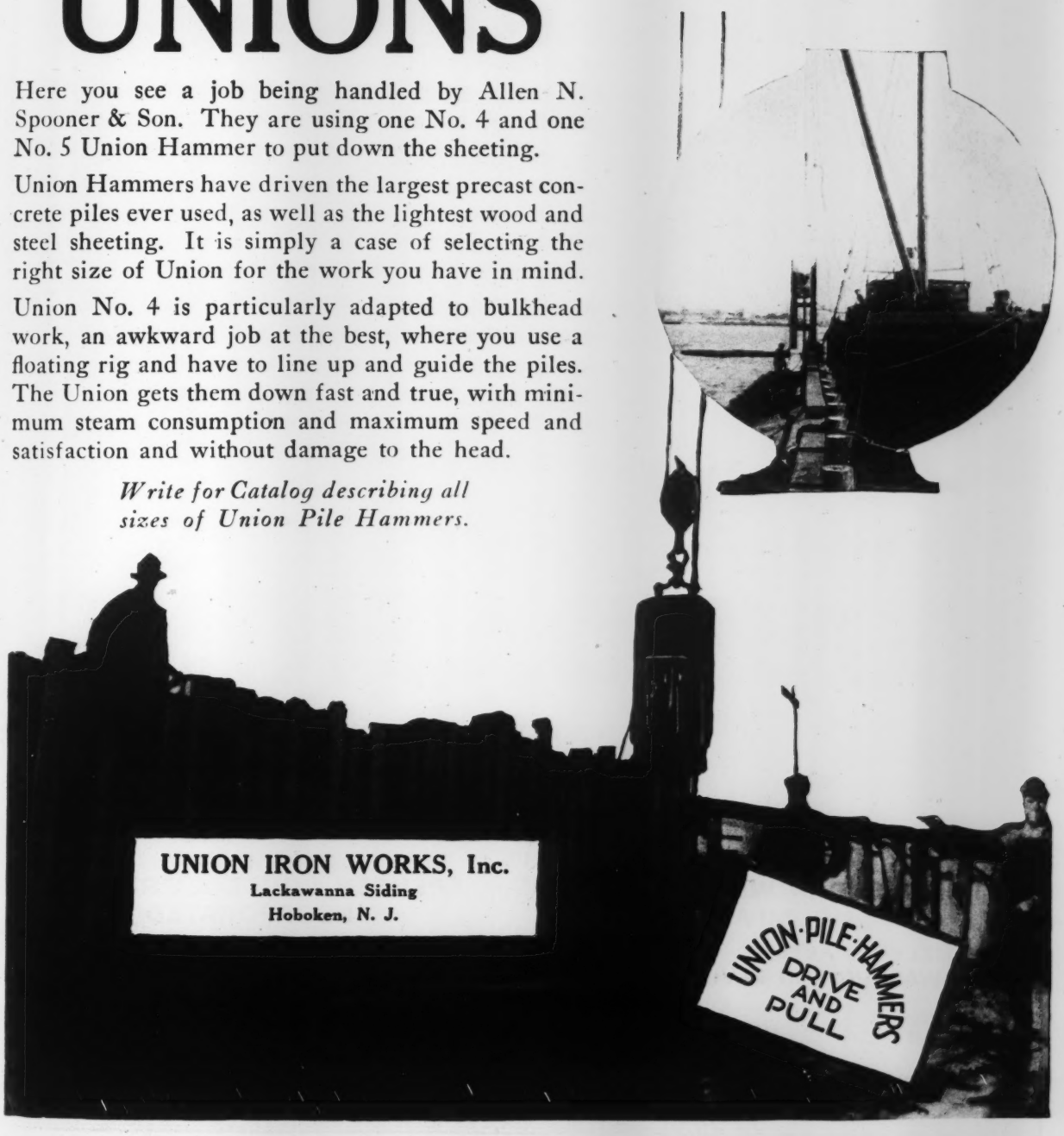
Driving Wood Sheeting in Jamaica Bay with UNIONS

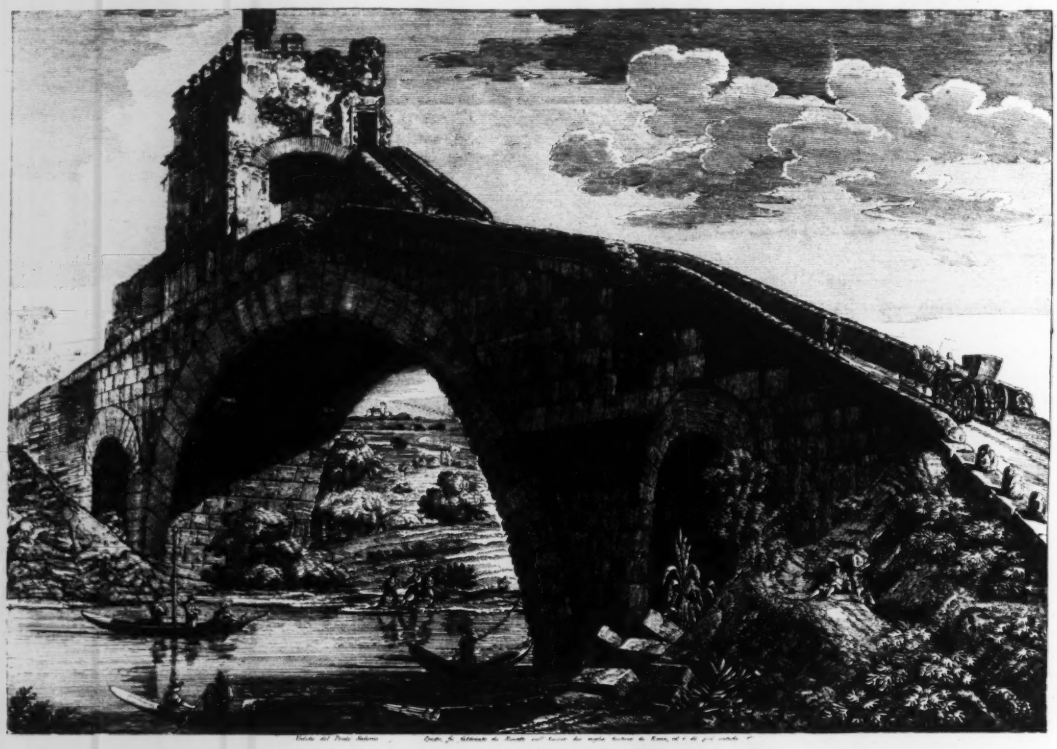
Here you see a job being handled by Allen N. Spooner & Son. They are using one No. 4 and one No. 5 Union Hammer to put down the sheeting.

Union Hammers have driven the largest precast concrete piles ever used, as well as the lightest wood and steel sheeting. It is simply a case of selecting the right size of Union for the work you have in mind.

Union No. 4 is particularly adapted to bulkhead work, an awkward job at the best, where you use a floating rig and have to line up and guide the piles. The Union gets them down fast and true, with minimum steam consumption and maximum speed and satisfaction and without damage to the head.

Write for Catalog describing all sizes of Union Pile Hammers.





This splendid example of ancient Roman Arch Bridge, built centuries before the advent of reinforced concrete, illustrates the simplicity and solidity of early masonry construction. Observe the "ramp" approaches and the watch-tower through which the bridge traffic passes.

SPENCER WHITE & PRENTIS FOUNDATIONS

We publish this reproduction of a rare engraving by Rossini, dated 1823, as we feel this will be of interest to the Engineering Profession.

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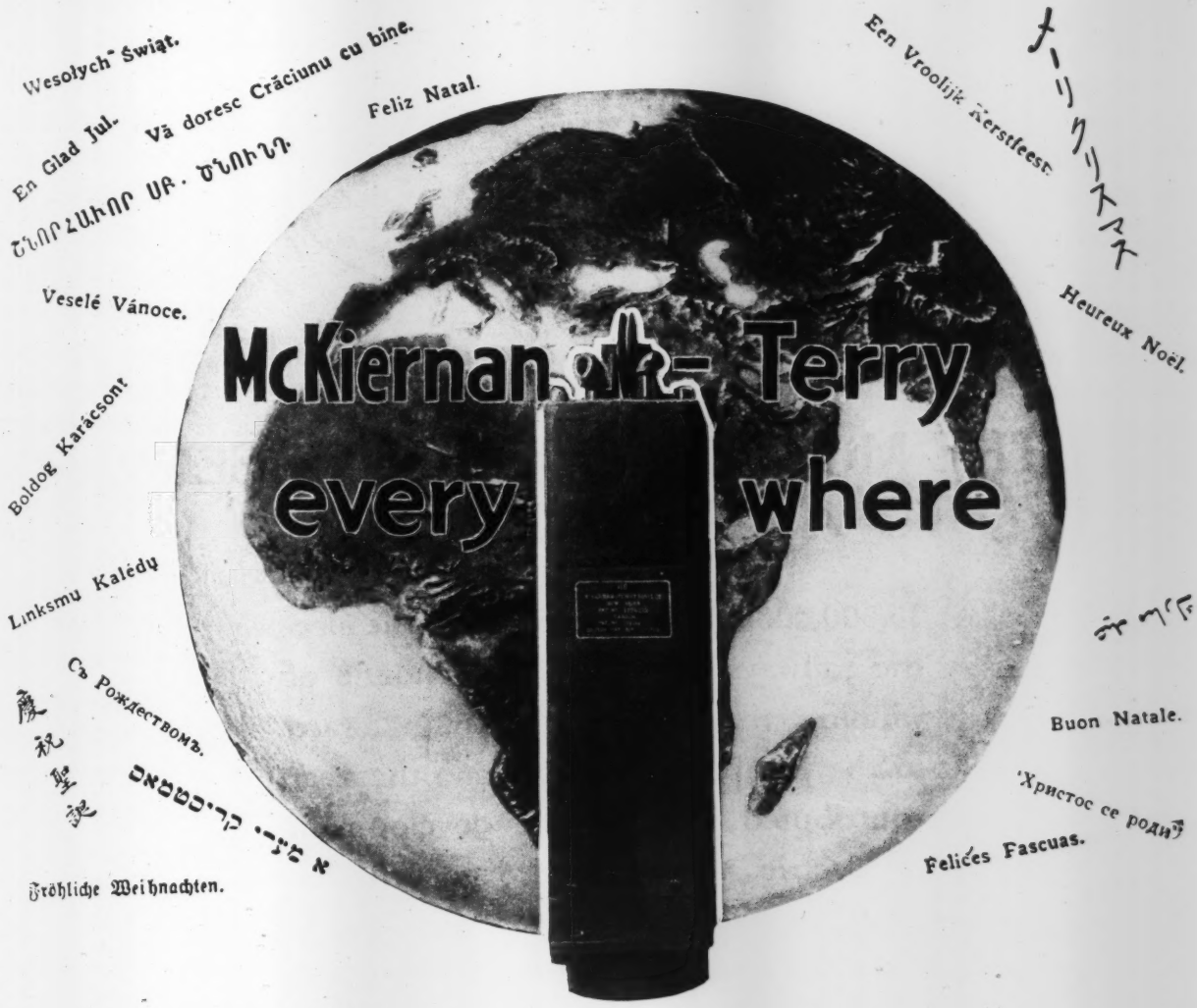
PILES—SHAFTS—TUNNELS—STEEL AND CONCRETE CONSTRUCTION



We have shipped Hammers to these Countries

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Rangoon, India	Maracaibo, Venezuela
Valencia, Spain	Rio Grande
Liverpool	Howrah, India
London	Fortaleza, Brazil
Hongkong	Amsterdam
Havre	Saigon, Cochin China
Melbourne	Calcutta
Kobe, Japan	New Castle, New South Wales
Rio de Janeiro	Port Natal, Africa
Rotterdam	Madras
Barcelona	Port Sweetenham, Straits Settlements
Antwerp	Singapore
Tampico	Adelaide, South Australia
Shanghai	Kingston, Jamaica
Bombay	Bourgas, Bulgaria
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Once again we say to all
McKiernan-Terry Users (and prospective users)
all over the world

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and a New Year full of
profits when you use these pile
hammers—*that's a promise!*

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1924

The Charles A. Coffin Medal awarded the Northern Texas Traction Company Fort Worth, Texas. George H. Clifford, Vice-President and Manager

FOR "THE MOST DISTINGUISHED SERVICE" TO A GREAT INDUSTRY

15,500,000,000 people rode on the electric railways last year. The honor of winning the Charles A. Coffin award to the company which during the year contributed most to the development of electric railway service goes to the Northern Texas Traction Company. This company has been under the executive management of Stone & Webster, Inc., for 19 years.

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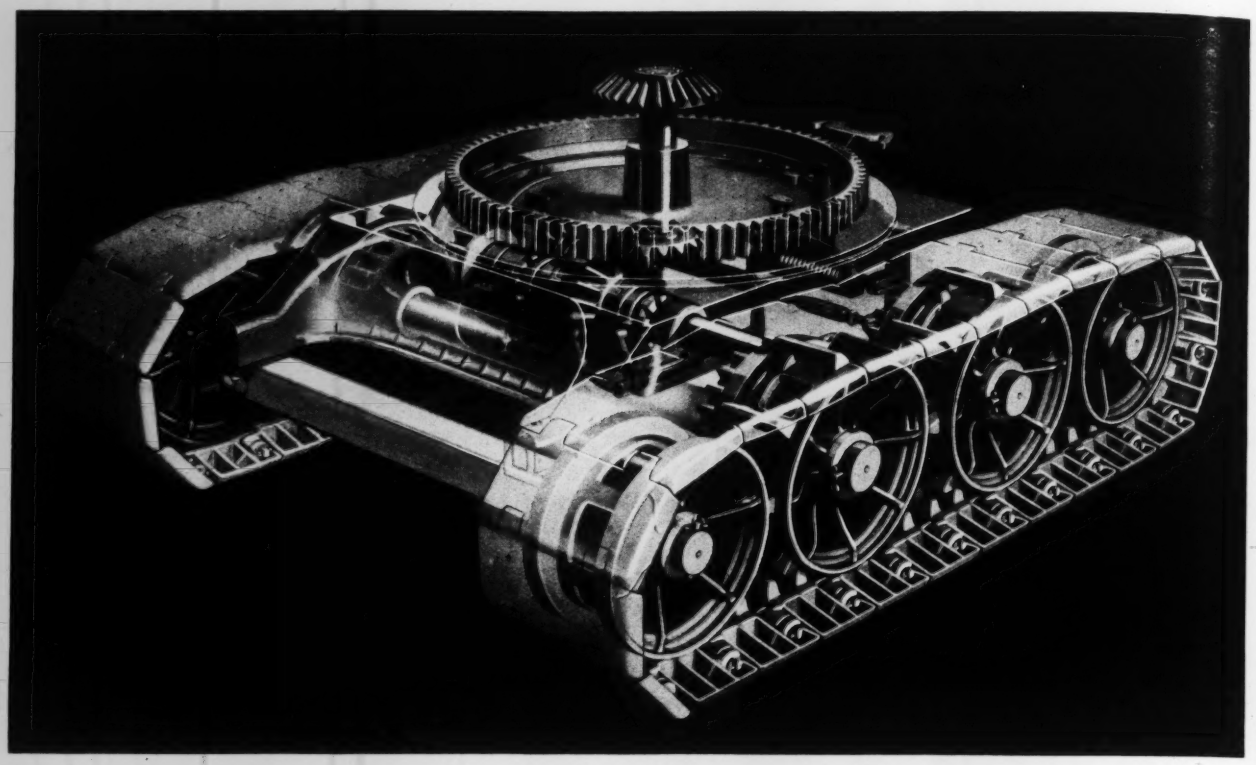

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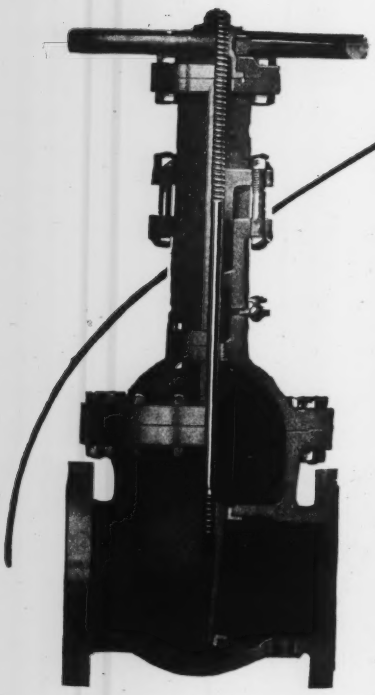

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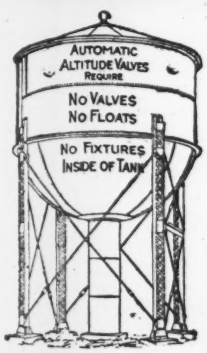
Controlling Altitude Valves

"standard equipment" to control water level

To experienced water works men, "G.A." Valves *are* "standard equipment" where water level must be (and *is*) automatically kept at a predetermined height—where water overflow must be eliminated—where water pressure must be depended upon at all times. Experienced men know the 5 definite, guaranteed features of "G.A." Valves.



1. They keep the water level constant in reservoirs, standpipes, tanks, etc., under all conditions.
2. Very simple in design. Contain no floats or fixtures inside or outside of tanks.
3. A perfect cushion by water and air absolutely prevents water hammer surges and broken mains. No metal-to-metal seats.
4. Can be closed in three ways, by hand, or automatically by water if a pipe breaks, and by electricity from distant points.
5. When desired can be connected to work "both ways" on a single pipe line.

"Made with Stop-Starter Attachment for Centrifugal Pumps."

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Pat. Automatic Cushioned Water Pressure Regulating Valves

1. Maintain a constant reduced pressure regardless of fluctuations on high pressure side.
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4. Operates quickly or slowly as required—No attention necessary.
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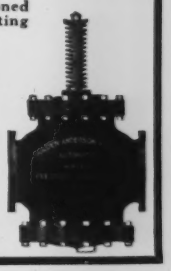

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Pat. Cushioned Electric Water Service Valves

1. Give instant control of water distribution from pumping station in case of fire.
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Operated by protected enclosed copper float.

Cushioned by both air and water.

Operate without hammering, sticking or chattering. No metal-to-metal seats. Made angle or straightway.

Sizes 1 in. to 30 in.

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Pat. Automatic Double Cushioned Check Valves

1. Especially adapted for Water Service.
2. For High or Low Pressure.
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Pat. Automatic Double Cushioned Triple Acting Non-Return Valves

1. Prevent shut-downs due to reversal of steam flow.
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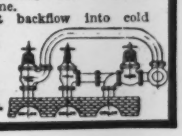

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1. Automatically Maintain Uniform Water Levels in Tanks, Standpipes, etc.
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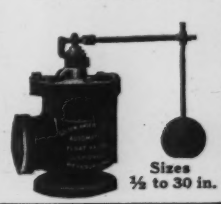
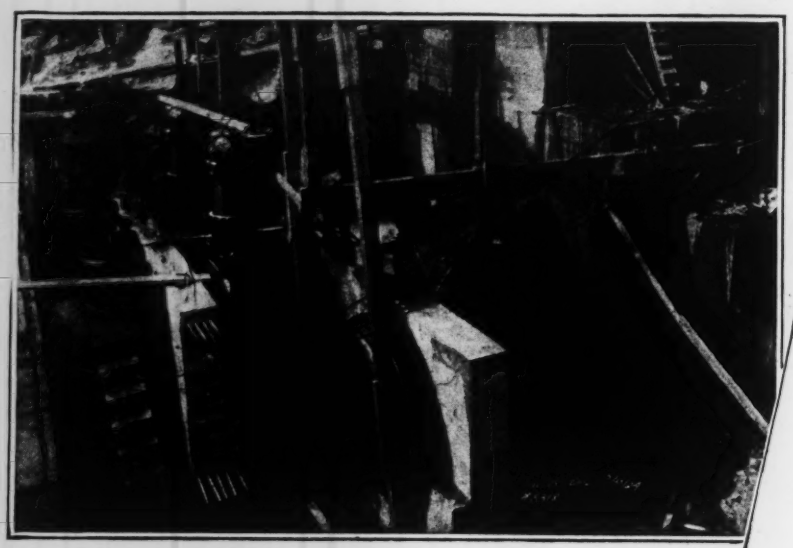
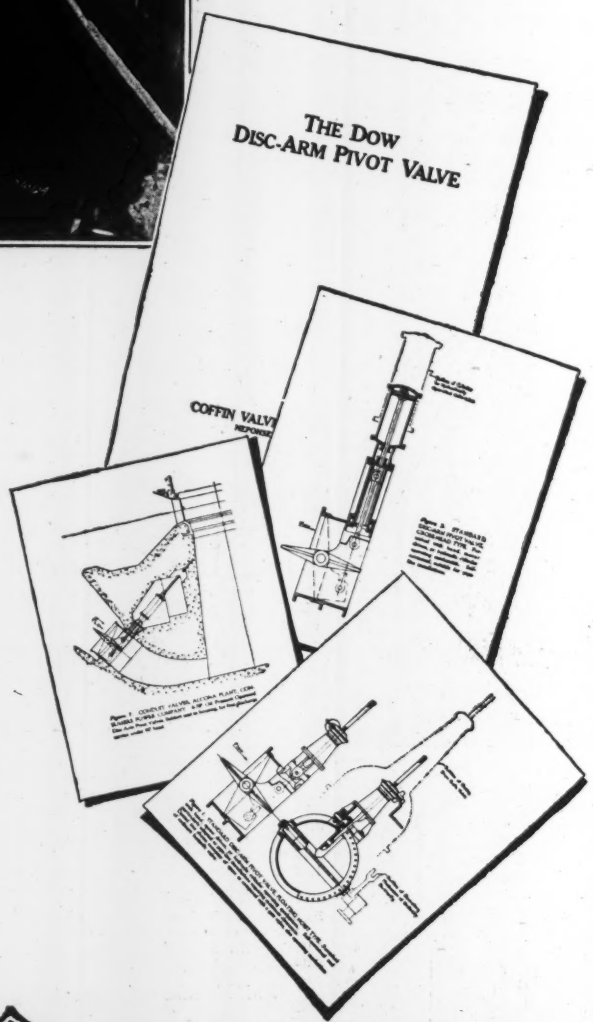


Sizes ½ to 30 in.





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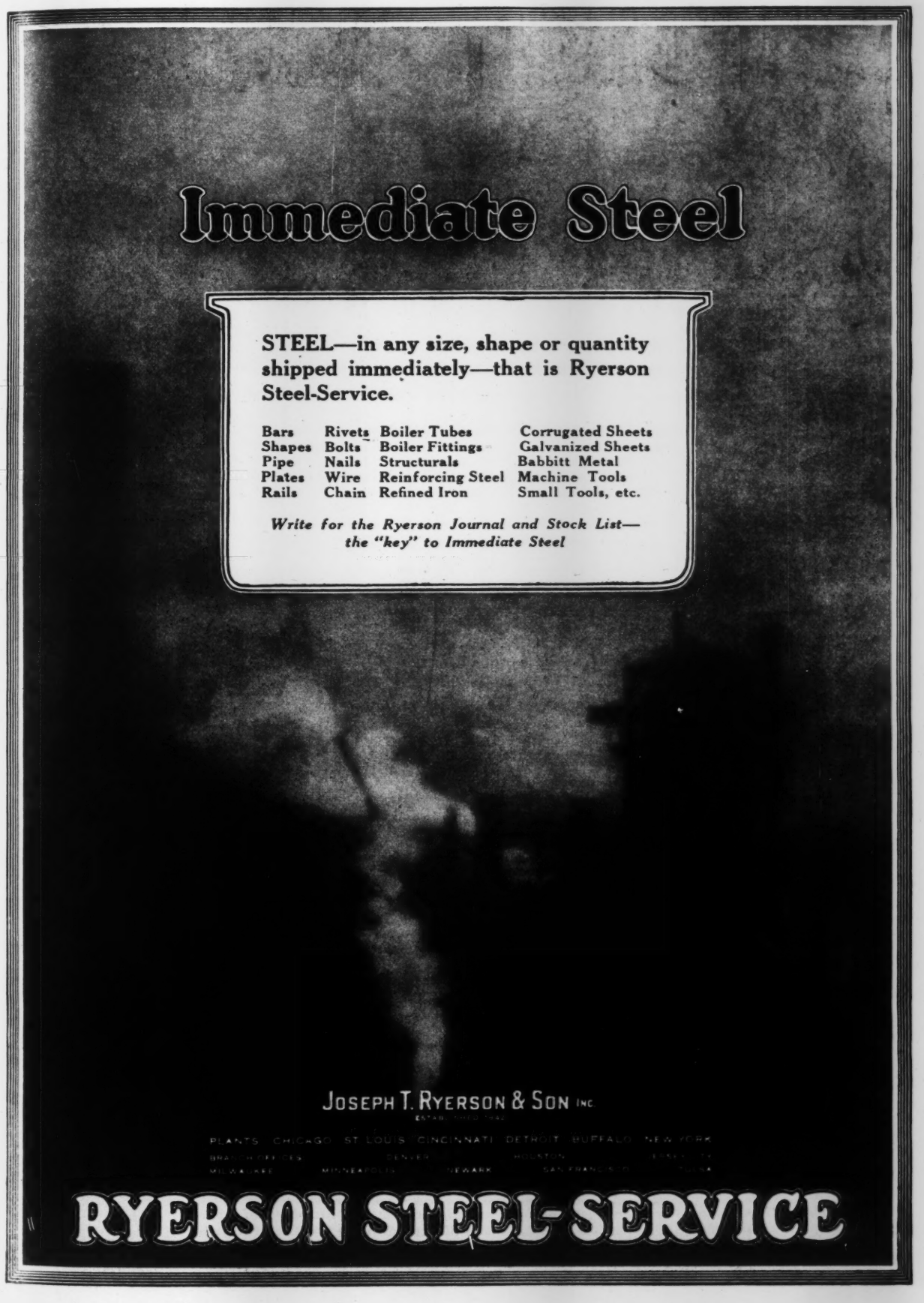
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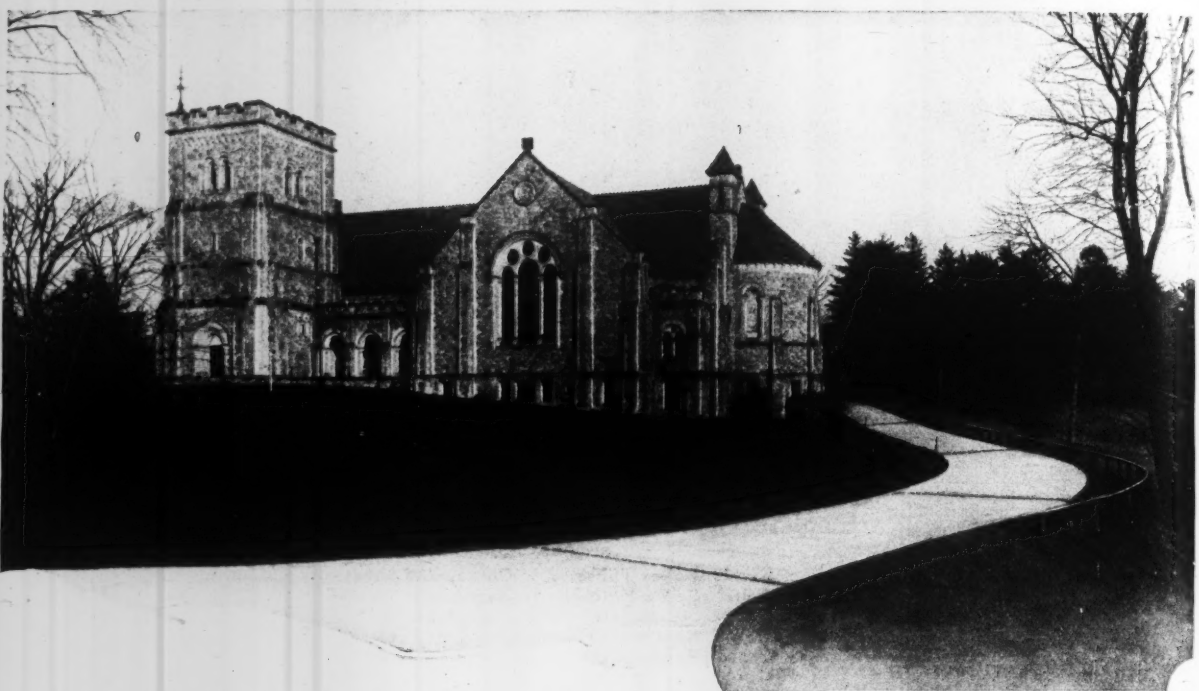

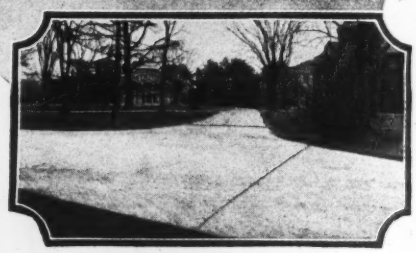

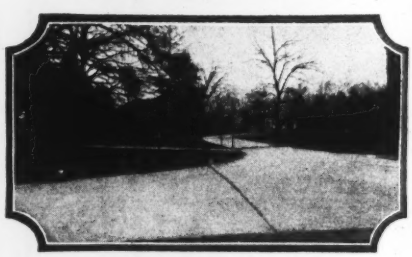

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Carey Elastite

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Elastite Expansion Joint is an elastic resilient material composed of two sheets of asphalt-saturated felt between which is "sandwiched" a body of carefully refined asphaltic compound.

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A LARGE and long-established firm of engineers and heating contractors in Indianapolis says that they prefer welded joints "because a welded connection is as strong as the original uncut pipe, and because the welded portion can be made stronger than the rest of the pipe by building up the weld. . . . Welded connections have proved stronger, tighter, and more economical than screw connections."

The oxy-acetylene process offers the easiest, quickest and most economical method of constructing pipe lines. And it makes no difference whether such lines be long or short.

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YOU CAN PROFIT from the experience of big pipe line and public utility companies who have for years used the oxy-acetylene process in laying their pipe lines.

Pipe line companies adopted the oxy-acetylene method of constructing their lines because their own engineering tests and practical experience have proved that this is the most satisfactory and economical method.

The same methods are applicable to pipe lines of various kinds in your plant. Oxweld engineers and fieldmen can bring to you the result of years of experience in pipe line construction and can show you how to profit from this experience, whether you join a few lengths of pipe, or many hundreds. Send for free illustrated booklet on industrial pipe work.

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AUTOCAR motor trucks because of their short wheelbase handiness and their tremendous amount of power and stamina are regarded by successful road contractors and highway officials as the standard equipment for highway construction work. Send for booklet describing the use of Autocars in building roads; or visit the Autocar exhibit at the Chicago Good Road Show and see why road contractors who own Autocars can make lower bids and get the contract.

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Please send me your booklet describing the advantages of Autocar short wheelbase handiness.

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Wherever there are roads to build

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OFFICIAL PROPOSALS

Copy: Official Proposals reaching our New York Office by 10 A. M., Tuesday can usually be printed in the issue out Thursday.

Rate:
40 Cents a Line an Insertion

Plans and Specifications for inspection by distant bidders may be filed at any of the Engineering News-Record offices without charge.

THESE ARE OFFICIAL NOTICES THAT BIDS ARE WANTED FROM BIDDERS EVERYWHERE

E.N.-R.

The Economic Aspects of Day Labor Construction

THE F & D has reprinted, in pamphlet form, an address on the above subject delivered by Arthur S. Bent, President Bent Brothers, Inc., Los Angeles, Cal., at the annual meeting of the American Road Builders Association.

If you want to obtain the opinion of an authority regarding day labor construction, write the Home Office and we will gladly mail you a copy of Mr. Bent's address.

Fidelity and Deposit Company
Baltimore

Fidelity and Surety Bonds

OFFICIAL PROPOSALS

Bids: Jan. 14.

Automobile, Portable Air Compressor

Dover, Del.

Sealed proposals will be received by the State Highway Department at its office, Dover, Delaware, until 1:00 o'clock p.m., Wednesday, January 14, 1925, and at that time and place publicly opened, for the furnishing of:

One 6 cylinder, 4 or 5 passenger Sedan Automobile on trade in basis for one 6 cylinder 5 passenger 1919 Studebaker Touring and Cash, not to exceed $1,800.00.

One Portable Air Compressor on rubber tired wheel mounting, completely enclosed. General requirements: Capacity 90 c.f.m.; 4 cylinder engine direct connected; pressure, 100 lbs. per sq.in., weight approximately 3,000 lbs.

Practical demonstration may be required. Delivery to be made at Dover, Del., within thirty days after acceptance of proposal.

Payment will be made within thirty days after delivery. Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Proposal for the furnishing of ....."

The Contract will be awarded or rejected within twenty (20) days from the date of opening of proposals. The right is reserved to reject any or all bids.

Complete specifications furnished by the bidder must accompany each proposal.

STATE HIGHWAY DEPARTMENT,
Dover, Delaware.

Bids: Jan. 6.

License Plate Materials

Albany, N. Y.

The Superintendent of Purchase of the State of New York will receive bids on or about January 6th, 1925, for furnishing materials for automobile license plates, including envelopes, cartons, carbon paper, enamel and steel blanks.

For bidding sheets and further information write to Room 106, Capitol, Albany, N. Y.

FRANK R. UTTER,
Superintendent of Purchase.

OFFICIAL PROPOSALS

Bids: Jan. 13.

Steel Pressure Conduit

St. Louis, Mo.

Sealed proposals for furnishing all materials, tools and labor necessary for constructing a steel pressure conduit from Howard Bend in St. Louis County to the City of St. Louis will be received at the office of the Board of Public Service, Room 208 City Hall, until 12 M. on the thirteenth day of January, 1925, at which hour they will be publicly opened and read.

The work will embrace the following major items and approximate quantities:

83000 lin. ft. of 60 inch welded or lockbar pipe or 62 inch riveted pipe laid in place.
3000 lin.ft. of 48 inch welded or lockbar pipe or 49 inch riveted pipe laid in place.
200000 cu.yds. of earth excavation.
1500 cu.yds. of concrete.
Misc. gate, blow-off and air valves.

Plans, specifications, bidding blanks and form of contract may be obtained from Edward E. Wall, Water Commissioner, Room 312 City Hall, upon the deposit of $10.00, which sum will be refunded upon the return of such plans, specifications and form of Contract.

Proposals must be made on blank form furnished by the President of the Board of Public Service, and each bid must be accompanied by a Cashier's or Treasurer's check on some Bank or Trust Company in the City of St. Louis in the amount of $50,000.00. The right to reject any and all bids is expressly reserved.

G. H. OETTING,
Supply Commissioner.

Bids: Jan. 7.

State Hospital Work

Poughkeepsie, N. Y.

Sealed proposals for Sanitary Work and Electric Work, Additions to Water Supply, Hudson River State Hospital, Poughkeepsie, N. Y., will be received by the State Hospital Commission, Capitol, Albany, N. Y., until 3 o'clock, p.m., on Wednesday, Jan. 7th, 1925, when they will be publicly opened and read. Proposals shall be enclosed in an envelope furnished by the State Architect, sealed and addressed, and shall be accompanied by a deposit as a guarantee that bidder will enter into contract if it be awarded to him. Deposit shall consist of a certified check drawn upon some legally incorporated bank in the State of New York and made payable to the State of New York, or money equal to the following: Sanitary, $2,000, and Electric, $1,000. The contractors to whom the awards are made will be required to furnish surety company bond in the sum of fifty per cent (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specifications Nos. 4397 and 4423. The right is reserved to reject any or all bids. Drawings and Specifications may be examined at the Hudson River State Hospital, Poughkeepsie, N. Y., at the New York Office of the Department of Archecture, 18th floor, Fuller Building, Broadway and 23rd Street; and at the Department of Architecture, Capitol, Albany, N. Y. Drawings, specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y.

Dated: December 8th, 1924.

Let's Get Acquainted at the Washington Convention January 12-14

Theodore Roosevelt Once Said—

→Something to the effect that every man owes at least a portion of his time to the betterment of the business with which he is connected. You can put your time and effort to the best possible advantage in building better conditions into the contracting business by being a member of the Associated General Contractors. →Obey the impulse and join now!

HARMON V. SWART
Insurance Adviser *Rate Specialist*
92 William Street, New York City

OFFICIAL PROPOSALS

Bids: Jan. 7.

State Hospital Work

Ogdensburg, N. Y.

Sealed proposals for Automatic Fire Sprinklers, St. Lawrence State Hospital, Ogdensburg, N. Y., will be received by the State Hospital Commission, Capitol, Albany, N. Y., until 3 o'clock p.m. on Wednesday, January 7, 1925, when they will be publicly opened and read. Proposals shall be enclosed in an envelope furnished by the State Architect, sealed and addressed, and shall be accompanied by a deposit as a guarantee that bidder will enter into contract if it be awarded to him. Deposit shall consist of a certified check drawn upon some legally incorporated bank in this State and made payable to the State of New York, or money in the amount of Two Thousand Five Hundred Dollars, ($2,500.00). The Contractor to whom the award is made will be required to furnish surety company bond in the sum of fifty per cent (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specification No. 4414. The right is reserved to reject any or all bids. Drawings and Specifications may be examined at the St. Lawrence State Hospital, Ogdensburg, N. Y.; at the New York office of the Department of Architecture, 18th Floor, Fuller Building, Broadway and 23rd St., and at the Department of Architecture, Capitol, Albany, N. Y. Drawings, Specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y.

Dated: December 8, 1924.

Bids: Jan. 15.

Rock Crusher

Durham, N. C.

Bids will be received by the Purchasing Agent of the City of Durham, N. C., for furnishing one rock crusher with guaranteed production of 175 to 225 tons of 2" and smaller from hard trap rock of one man size and one elevator for the same, until 2:00 p.m., January 15, 1925, at which time they will be publicly read at the City Hall.

Complete detailed specifications of the crusher and elevator, a statement giving guaranty period on the equipment, and a statement of service on repair parts guaranteed by the manufacturer and price complete delivered at Durham must be filed before the time of opening the bids. Further detailed requirements for this equipment can be obtained from H. W. Kueffner, Director of Public Works.

The City reserves the right to reject any or all bids or to accept such bids as appear in its judgment to be for the best interests of the City.

A. T. CRUTCHFIELD,
City Purchasing Agent.

U. S. Government

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. Dec. 12, 1924. SEALED PROPOSALS will be opened in this office at 3 p.m. Jan. 9, 1925, for remodeling, including incidental changes in the mechanical equipment of the United States Post Office and Custom House at Burlington, Vt. Drawings and specifications may be obtained from the Custodian of the building or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

U. S. ENGINEER OFFICE, Pittsburgh, Pa. Sealed proposals will be received here until 12 noon (Eastern time), January 14, 1925, and then opened, for furnishing and delivering three steel deck barges. Further information on application.

U. S. ENGINEER OFFICE, 250 Old Land Office Building, Washington, D. C. Sealed proposals will be received here until 12 M. January 15, 1925, and then opened, for the construction of the First High Pipe Line for the District of Columbia water supply project. Further information on application.

U. S. Government

U. S. ENGINEER OFFICE, 1307 Schaff Bldg., 1505 Race St., Phila., Pa. Bids are wanted until Jan. 5, 1925, for the purchase of the U. S. Dredge COROZAL and three 850-cubic yard steel bottom dump scows, all in good condition. Further information on application.

U. S. ENGINEER OFFICE, Florence, Ala. Sealed proposals will be received here until 11 a.m., January 31, 1925, and then opened, for furnishing and delivering structural steel lock gates, including fittings, castings, etc., for the navigation lock of Wilson Dam, Tennessee River, and for the erection of same. Further information on application.

U. S. Government

U. S. ENGINEER OFFICE, 405 Custom house, Cincinnati, Ohio. Sealed proposals will be received here until 10 a.m., (central standard time), January 8, 1925, and then opened, for two 70 foot Diesel electric stern wheel towboats. Further information on application.

EXCAVATION

Steam Shovels for rent with crews or work taken by contract.

Dinkeys and cars or teams furnished.

H. C. AMBLER

3717 Old York Road, Philadelphia, Pa.

EMPLOYMENT

POSITIONS VACANT

ASSISTANT professor in structural engineering wanted in leading midwest university. Teaching experience preferred. Give age, education, experience and references. Salary according to qualifications. P-954, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

ASSISTANT engineer. An opening will exist for a graduate structural engineer who has experience in the practice of structural design and details and is familiar with the estimating and contracting requirements of structural steel business. State qualifications and salary first letter. Connection is with structural fabricators in New York District. P-989, Eng. News-Record, 10th Ave. at 36th St., New York.

A MECHANICAL draftsman wanted for general design and detail work of rock crushing, coal and ore mining plants. A man capable of advancement in large corporation in Eastern Pennsylvania desired. Give age, married or single, education, experience, references, salary expected and date available. P-1, Eng. News-Record, Real Estate Trust Bldg., Philadelphia, Pa.

CIVIL ENGINEER with several years' experience in sewer design. Must be neat draftsman. Give age, education, detailed statement of experience with list of references, date available and salary expected. P-1000, Eng. News-Record, Leader-News Bldg., Cleveland, O.

POSITIONS VACANT

DESIGNER for commercial concern specializing in reinforced concrete and structural steel. Technical graduate with at least four years' experience with bar concern or structural steel fabricator. Give complete details, education, experience, salary expected, and earliest date available. Permanent position for right man. P-868, Eng. News-Record, Leader-News Bldg., Cleveland, O.

CHIEF engineer wanted; one familiar with the design and construction of coal handling equipment. Give experience, references and salary expected, in first letter. Plant located in Pittsburgh District. P-973, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

DETAILER and checker wanted, well experienced in all types of building work and highway bridges. Position permanent to satisfactory man. State age and complete experience, salary wanted and when you can report for work in reply. P-996, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

DRAFTSMAN, experienced in ornamental iron, detailing stairs, fire escape, elevator inclosures, miscellaneous iron. Give references, age and salary expected. Location in South. P-953, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

ARIZONA
Globe
Tucson

FLORIDA
Jacksonville

GEORGIA
Savannah

INDIANA
Evansville

IOWA
Dubuque

MISSOURI
St. Joseph

MONTANA
Butte
Helena

NORTH DAKOTA
Bismarck

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E.N.R.

Continued from the bottom of opposite page

POSITIONS VACANT

DRAFTSMEN (structural) for work on subway construction, New York City; entrance salary $2,160 per annum, with opportunities for advancement; open to those with two years of practical experience in structural steel drafting, or its equivalent; citizens only; apply giving full information as to education and experience to Chief Clerk, Board of Transportation, 49 Lafayette Street, New York City.

DRAFTSMEN, detailers and checkers on shop detailing for structural steel. Morava Construction Company, 85th and Stewart Ave., Chicago, Ill.

ESTIMATOR and designer; should be graduate of a recognized engineering school and have had some designing experience, also at least two years' experience in the drawing room of a structural steel fabricating plant. P-991, Eng. News-Record, Real Estate Trust Bldg., Phlia., Pa.

EXPERIENCED structural detailers wanted. Single men preferred. Only experienced men need apply. Application should give telegraphic address. State experience and accompany sample drawing of work. State salary desired. Address Box 654, Havana, Cuba.

EXPERIENCED structural steel estimator, detailers and checkers. Give record of experience, education, nationality, age, salary desired, and when available. Opportunity for producers. St. Louis Structural Steel Co., East St. Louis, Ill.

POSITIONS VACANT

PERSONNEL manager, of broad practical experience and training for contact and placement work. Ability to select and analyze requirements in technical field for diversified industries. Give detailed particulars. P-990, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

REINFORCING bar and allied building products concern has opening for detailer and estimator familiar with this business. Write fully. P-968, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

SEVERAL experienced structural steel checkers and detailers. Permanent positions for capable men who can produce. Ideal living and working conditions. State age, experience in detail, and salary expected. Address Pennsylvania Car Company, Beaumont, Texas.

STRUCTURAL steel engineer and estimator wanted, who is able to take care of drafting room, five thousand ton per year plant, Southwest. Good opportunity for middle aged aggressive man. Floaters please don't apply. P-971, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

WANTED—Chief of party; must be experienced in sewer surveys and layout of city pavements. None but experienced men need apply. Box 1529, Lakeland, Fla.

POSITIONS VACANT

WANTED—Chief of party, near New York City, to report about January 15. 25 to 30 years old. Must be a neat, rapid and efficient draftsman. Prefer college graduate with not less than three (3) years' experience. Salary $175.00 with overtime. Send sample of drafting, which will be returned. Also rodman, 20 to 25 years old, some drafting. Prefer college man with 1 or 2 years' experience. Salary $125.00 per month with overtime. In answering please give religion. P-992, Eng. News-Record, 10th Ave. at 36th St., New York.

EMPLOYMENT SERVICE

EXECUTIVES, engineers, will find our individual, confidential service an effective medium in making new connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Our refund agreement protects you. Not employment agency. Jacob Penn, Inc., 305 Broadway, New York.

SALARIED men seeking tentative offers of new connections, are invited to communicate confidentially with the undersigned, who will negotiate overtures without jeopardy to present connections. A professional, ethical service, restricted to high grade positions; established 1910. Retaining fee refunded as provided in our "Refund Contract" if service is not satisfactorily rendered as per contract, and such refund be requested within three months from date remitted. Send name and address only for particulars. R. W. Bixby, Inc., 701 Lockwood Building, Buffalo, New York.

EMPLOYMENT AGENCIES

DRAFTSMEN-Engineers—positions waiting—for capable draftsmen, designers and detailers on machine work, structural steel, reinforced concrete, architectural, ornamental iron, auto chassis and plant layout, etc., in Cleveland and vicinity. Interstate Business Exchange, 656 Rose Bldg., Cleveland, Ohio.

TECHNICAL positions of all kinds. Call or write, Broome Technical Agency, 15 Broad Street, near Wall, New York. H. T. Broome, formerly with "The World," in employment work.

POSITIONS WANTED

Civil Engineers

CIVIL engineer, broad experience, desires connection with technical periodical. PW-941, Eng. News-Record, 10th Ave. at 36th St., New York.

INFORMATION WANTED

Engineers or Storeroom Keepers

Notify us when your construction job is winding up. We purchase all classes of **Construction Equipment** and **Supplies**, either new or second hand, left over or not wanted. **Surplus Storeroom Stocks—Plumbing—Electrical** or **Steam.** We pay commission on all purchases anywhere.

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Prepare for a Bigger Job

Foremen, Timekeepers, Clerks, become Estimators and Construction Managers by spare time study. Full particulars sent upon request.

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Bridge Construction Requires Special Study,

training and experience generally acquired only after many years of work in an engineer's office. Even then, the knowledge gained is likely to be confined to a limited number of designs and types. For a successful bridge engineer, wide experience is essential.

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Here is a course that will make it possible for you to gain extensive experience in the design and construction of all types of bridges in a comparatively short time. Each type is separately treated. The course is unusually complete and up-to-date in every detail, being the result of 30 years experience of Mr. Francis W. Wilson in this particular branch of engineering. An ideal post-graduate course for practicing engineers. Many are now students.

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Sales Mgr. Tool Steel.....$5000
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Civil, Mechanical, Electrical Draftsmen Sales Engineers.

THE PERSONNEL SERVICE COMPANY
880 The Arcade, Cleveland, Ohio.

POSITIONS WANTED

CIVIL engineer; M. A.M. SOC. C. E., fourteen years' experience highway and sewer design and construction, as engineer for municipalities and contractors. Exceptionally broad experience on costs and modern methods of construction. Services available in about thirty days. Minimum salary, $4,800. PW-964, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, broad sanitary experience, desires charge extensive park sanitation or health department organization. PW-940, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, specialty water supply and power, desires charge of department with trust or bonding company. PW-942, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, 32, Assoc. Mem. A.S.C.E. and actively engaged in building industry for past eleven years. Thoroughly conversant with every phase of building design, estimating, construction and supervision. Will go anywhere. PW-985, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL ENGINEER, graduate, 16 years' experience, design and construction; docks, sewers, railroads, subways, filters; power and industrial plants; hydro-electric developments. PW-2, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL ENGINEER, 14 years' experience design and construction of Davis hydro-electric and steam power plants, industrial buildings and commercial buildings, desires position of responsibility. Available about Feb. 1. PW-3, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

GRADUAUTE civil engineer, three years' general engineering experience and five years reinforced concrete, mostly with bar company, desires connection in or leading to sales work. PW-957, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

HYDRAULIC and civil engineer, 18 years' experience on big dams, irrigation, drainage and river work, desires change. Good executive. PW-988, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

Drafting and Designing

ARCHITECTURAL draftsman and engineer; recent graduate, wants permanent connection in West. Seven years' experience on building construction. Age 28. Correspondence solicited. PW-995, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

STRUCTURAL draftsman and detailer, also reinforced concrete, power plants, cement plants. Experienced on construction. Prefer mining or isolated camp. PW-958, Eng. News-Record. Old Colony Bldg., Chicago, Ill.

STRUCTURAL draftsman with five years' experience in detailing office and mill buildings, wishes position with a firm fabricating mill buildings. Location, Metropolitan district. State terms. PW-4, Eng. News-Record, 10th Ave. at 36th St., New York.

YOUNG engineer, technical education, six years' varied office and field experience. Neat draftsman. Permanent position with good future desired. PW-998, Eng. News-Record, Real Estate Trust Bldg., Philadelphia, Pa.

Bridge and Structural

CHIEF ENGINEER, 1,200 tons month structural shop, design, cost, sales and concrete design, desires change. Age 34. PW-982, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

MECHANICAL-STRUCTURAL engineer, technical education; 15 years' general experience in design, construction and sales; now employed; open for engagement as engineer in charge, branch office manager, engineer of maintenance or other work of responsibility. PW-879, Eng. News-Record, 10th Ave. at 36th St., New York.

POSITIONS WANTED

STRUCTURAL ENGINEER, twenty years' experience in steel, wood and reinforced concrete. Suitable executive for architect, engineer, contractor or fabricator. Some sales experience. PW-948, Eng. News-Record, 10th Ave. at 36th St., New York.

Superintendents

GENERAL superintendent, age 40 with 15 years' successful record, desires connection with contractor specializing in industrial buildings. PW-961, Eng. News-Record, Real Estate Trust Bldg., Philadelphia, Pa.

GENERAL superintendent or chief engineer open for engagement January first. Twenty years' experience divided between contracting and professional work in technical executive and construction work, highways, sewers, waterworks, railroads, bridges, hydraulic and industrial works. Age forty. Salary $5,000. Short engagements considered in South Atlantic States. PW-955, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

MAN, 29, desires permanent connection with reliable building contractor or architect as superintendent's assistant or other position where twelve years' experience as draftsman and checker will prove valuable. PW-911, Engineering News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, age thirty-four, sixteen years' experience from bottom up on difficult and heavy excavations, foundations, outfall and intercepting sewers, sewage disposal, waterworks and submerged pipe work, circulating water and cooling systems for steam-electric power plants. At present completing intake for water supply Ohio River. Available January first. Interview any time after December fifteenth. Have following of highly trained men for this class of work. Salary $100.00 per week. PW-956, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT or assistant, graduate C. E.; six years' construction experience, seeks opportunity to show ability. New York City preferred. PW-977, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, general foreman, state road builder. A1 man. Concrete, grading land development. Available at once. Anywhere. Can furnish first class operators for all road building machines. PW-986, Eng. News-Record, 10th Ave. at 36th St., New York.

Miscellaneous

COMPETENT architect with broad executive experience desires position. PW-950, Eng. News-Record, 10th Ave. at 36th St., New York.

CONSTRUCTION foreman; 37; married; 18 years' experience, 6 years office work, 7 years as foreman, 5 years as general foreman. Experience covers subways, sewer, tunnel, reniforced concrete structures, industrial plants, oil refineries, etc. Available at once. Willing to go anywhere. PW-951, Eng. News-Record, 10th Ave. at 36th St., New York.

POSITIONS WANTED

CONSTRUCTION engineer; 20 years' practical experience, modern paving, highways, etc., sewers, bridges, etc., municipal or state work preferred; careful estimator and give personal supervision have following; can furnish references as to ability, etc. PW-981, Eng. News-Record, 10th Ave. at 36th St., New York.

CONTACT man. An engineer with experience and personality who knows the limitations of the public official, can sell the services of a reliable engineering firm. Moderate salary and commission. PW-922, Eng. News-Record, 10th Ave. at 36th St., New York.

EXECUTIVE position wanted by a man, well qualified, and thoroughly experienced in the design, details, and fabrication of all classes of steel structures. Can make small investment. PW-927, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

EXPERIENCED concrete carpenter foreman, 10 years on concrete construction, public and private buildings. Married, age 38. PW-984, Eng. News-Record, 10th Ave. at 36th St., New York.

HIGHWAY engineer, 12 years' experience, wants position; speaks Spanish and will go anywhere. J. F. Haley, 5000 Woodlawn Avenue, Seattle, Washington.

HYDRAULIC engineer, 20 years' experience, irrigation, drainage, river control, city water supply. Available Jan. 1. PW-945, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

PUBLICITY—A man of broad scientific and engineering education and several years' experience in the presentation of technical subjects through published work and popular lectures, desires connection as publicity agent for manufacturer or association. PW-921, Eng. News-Record, 10th Ave. at 36th St., New York.

TIMEKEEPER or field clerk, age 33, married; 7 years' experience. Can speak French and English and can manage office. Would like to hear from a company who can give steady work the year round. Best of references on request. Address Box 186, Dover, New Hampshire.

TRENCH machine operator, gas or steam. Have own tools; do any repairs; steady, reliable mechanic. Go anywhere. References. PW-965, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

WATER power and sanitary engineer, 18 years' experience on big jobs, thoroughly qualified, desires change. Western experience. PW-987, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

SUPERINTENDENT
Structural Steel Fabricating Shop
Experienced in all classes of structural steel; young and aggressive. Can get results. Employed at present; want to connect up with a live concern. Can furnish A No. 1 references.
PW-7, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

We Will Feed Your Men-

We operate boarding camps anywhere.

Laborers furnished free where we conduct commissaries.

We have been boarding men on large out-of-the-way construction jobs for 20 years in all parts of the United States and Canada—and under all conditions. We know the needs and all the little details in connection with such camps that keep labor contented and on the job. It will pay you to turn your labor problem over to us.

IT IS OUR SOLE BUSINESS

Consider this when you are ready to recruit a gang for an out-of-the-way job. We can give you the same thorough satisfaction that we have such people as the Frisco Lines, U. S. Army, Atlas Powder Co., Standard Oil Co., I-GN Railroad, etc.

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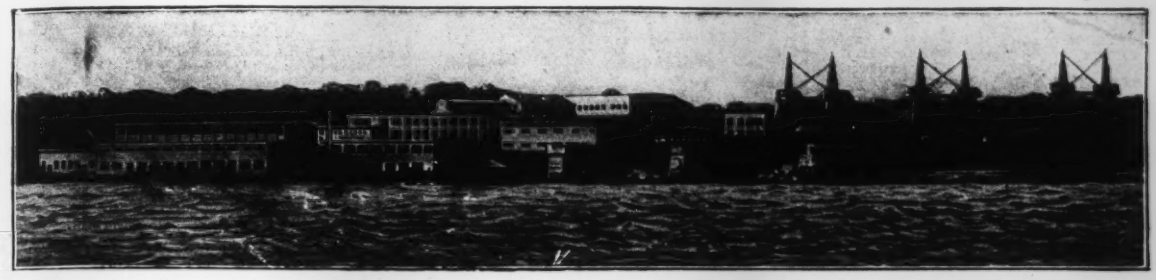

Principal Equipment Items Include:

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- Pipe Shop Equipment
- Blacksmith Shop Equipment
- Joiner Shop Equipment
- Electrical Equipment
- Hoists, Elec., Steam and Shepard
- Transformers, 15 to 667 K. V. A.
- Motors, 1 to 75 H.P.
- Pneumatic Tools
- Power Plant Equipment
- Switch Board Equipment
- Automobile Trucks
- Yard Equipment

LOCOMOTIVE CRANES

McMyler Locomotive Cranes, 8 wheel, 15 ton, 45 ft. boom, fully equipped, manufactured by McMyler Interstate Co.

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1 Std. Ga. steam 4-wheel, saddle tank, No. 54463, manufactured by Montreal Locomotive Works.

4 Flat Cars, Std. Ga. 50,000 lb. cap., length 35 ft. 10 in.

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A choice plot of 34 acres with 1800 ft. water front and switch tracks to the N. Y., N. H. & H. R.R., 15 modern industrial buildings, comprising 200,000 sq. ft. of manufacturing space, and all the equipment—hundreds of items—that operated this up-to-date plant. Everything is practically new—used only a very short time. Whatever you need may be right here awaiting your orders, and our prices will net you substantial savings. Write or wire your requirements or come today and make your selections.

GROTON IRON LIQUIDATING CO.
Groton (New London), Conn.

POSITIONS WANTED

YOUNG engineer desires position with construction company, offering future. Varied office and field experience. PW-926, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

WORK WANTED

Wanted

Railroad, highway or heavy foundation work for steam shovel and concrete gang. Eastern or Middle Atlantic States. WW-871, Eng. News-Record, 10th Ave. at 36th St., New York.

EXTRA WORK WANTED

Engineering and Contracting Firm

can turn out highly practical designs of reinforced concrete work, real estate developments, and small commercial buildings. Designs by graduate engineers with construction experience. Pringle and Arnold, 1315 Half St. Southeast, Washington, D. C.

AGENCY WANTED

Pacific Coast Agency Wanted

by competent technical sales engineer, structural steel or allied lines, for either eastern or western manufacturers. AW-993, Eng. News-Record, 883 Mission St., San Francisco, Calif.

SALESMEN WANTED

Salesmen Wanted

Attractive proposition to responsible parties who can sell cities and municipalities. SW-823, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

Must Be Go-Getter

If you are one and wish to associate yourself with one of the leading distributors of construction equipment in Chicago, write us giving your experience, age, remuneration expected, etc. All applications will be held confidential. SW-934, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

SALESMEN WANTED

Graduate Civil Engineer Wanted

For sales promotion work. Required to travel continuously, at least for first year. Federal road-building experience valuable. Good personality essential. Liberal salary. Write SW-997, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

Additional undisplayed ads on the following page

AGENTS WANTED

GASOLINE HOISTS

A well-known manufacturer of hoisting machinery desires agents to handle their gasoline hoists in Michigan, Indiana, Illinois, Minnesota, Wisconsin, Iowa and Missouri. Liberal commission, and machines will be shipped on consignment.

AS-943, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

MECHANICAL SUPPLIES, LIMITED

79 Grenfell Street, Adelaide, Australia

We are in contact with the industrial and mining plants of South Australia and Broken Hill. We handle **Engineering** and **Mining Supplies**, and specialize in **Mechanical Handling of Materials**. Manufacturers of high quality products are invited to communicate with a view to establishing business relations.

Cables "MECSULIM" ADELAIDE, Code; Bentleys.

WANTED

Established Firm of Live Manufacturers' Agents and Sales Engineers

desire additional lines of Building Materials or Contractors' Equipment. Will consider any reasonable proposition. Location St. Louis, Mo.

AS-999 Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

A Manufacturer of

Locomotive Cranes

will receive applications for employment in its Sales Department. Applicants must discuss the following points fully in their first letters and the points will be given consideration in the order listed:

1. **Ability as a salesman**
2. **Contact with buyers in certain territories.**
3. **Knowledge of heavy machinery especially locomotive cranes.**
4. **Remuneration basis.**

Address

AS-5, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

SALESMEN AVAILABLE

SALES engineer, 31, technical graduate, with 4 years' experience on heavy reinforced concrete construction and machinery installation and three years successful sales record, wishes to handle sales for a reliable manufacturers line in the New England district. An opportunity for a reliable manufacturer's line in the with a high grade aggressive sales representative. SA-994, Eng. News-Record, 10th Ave. at 36th St., New York.

REPRESENTATIVE AVAILABLE

Representation Available N. Y. C.

Mr. Manufacturer Contractors' Specialty or Equipment. You use our fireproof warehouses, sales and clerical force. We cover contractors export and industrials. Heavy Hardware, R. A., 938, Eng. News-Record, 10th Ave. at 36th St., New York.

PATENT ATTORNEY

PATENTS — Send for form "Evidence of Conception" to be signed and witnessed. Form fee schedule, information, free. Lancaster and Allwine, 272 Ouray Bldg., Washington, D. C.

BUSINESS OPPORTUNITY

Services and Capital

General superintendent, age 40 with 15 years successful record, desires connection with contractor specializing in industrial buildings. Will invest some capital. BO-901, Engineering News-Record, Real Estate Trust Bdlg., Philadelphia, Pa.

WANTED

Used Transit Wanted

Must be modern standard make, good condition. Name lowest cash price, make, equipment and condition. Brown & Gibbs, Box 796, Asheville, N. C.

U. S. Government

U. S. ENGINEER OFFICE, Galveston, Texas. Sealed proposals will be received here until 2:30 p.m., January 13, 1925, and then opened for sale of steel hulled motorship "Isonzo" and cargo of lumber at Mexican Dock, Port Arthur, Texas. Further information on application.

WANTED

Work for two Steam Shovels and Twenty Teams

F. J. MANN & SONS
Ashland, Ohio

FOR SALE

Plant in Pittsburgh District

Consisting of building 157x42 ft. boiler house 30x30 ft. Both buildings are of steel and iron construction. Other buildings, of wood construction, are two 32x24 ft. and one 30x20 ft.

600 ft. of railroad siding and 5 acres of real estate.

Plant can be used for chemical manufacture or adapted to foundry work. Will sell with or without equipment.

Keystone Metals Reduction Co.
Farmers Bank Bldg., Pittsburgh, Pa.

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Mounted on 7½-ton Mack Truck, ½-yd. Williams clam shell bucket. Practically new. Will stand any inspection.

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Road-Rollers; Pavers; Shovels; Keystone Excavators; Locomotives; Track; Dump and Flat Cars; Hoists; Cranes Graders; Finishers.

All necessary Equipment for complete plant.

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Owing to the holiday—New Year's, Jan. 1st, the Searchlight pages of the Jan. 1st issue of the *Engineering News-Record* will close for press earlier than usual. Copy should reach us as follows:

Display Ads—Copy required by 10 A. M. Saturday, December 27th.

Want Ads—Copy required by 10 A. M. Monday, December 29th.

Proposal Ads—Copy required by 10 A. M. Tuesday, December 30th.

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E. N.-R.

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4—Geary Water-tube Boilers, 250 hp. each.
For sale cheap if moved quickly. They have never been used.
Will sell one, two or all.

Pittsburgh Machinery & Equipment Company
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For all classes of work

New and used, for sale or rent.

The Day & Maddock Co.
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Hemlock 201

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125 pieces U. S. 13¼ x ⅜-in.x38-lb. from 17 to 20 feet long. First class used. $2.00 per 100-lb. F.O.B. Adams, Wis.

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Friendship, Wis.

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2—500 hp. Keeler boilers with self supporting stacks, Wetzel Stokers, and all accessories. 160 lbs.
12—823 hp. B. & W. Stirling Water Tube Boilers, Class M-30 200 lbs. pressure. Westinghouse stokers, forced draft fans. Vulcan soot blowers and all accessories.
2—300 hp. Heine boilers, 150 lbs. pressure. Murphy stokers and accessories.

Write for prices and specifications.

Nashville Industrial Corporation
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High Lift "B" ERIE Shovel Factory Rebuilt—

and guaranteed in perfect condition (same guarantee as a new ERIE). Shop number 2164. 19 ft. 8 in. boom and 16-ft. dipper handle. Power boom hoist, trip rope tightener, auxiliary exhaust. ¾-cu.yd. dipper with panama teeth.

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Erie, Pa.

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A Million Dollar Stock of Rebuilt Equipment

Clamshell Buckets
Dragline Buckets
Cranes and Draglines
Concrete Mixers
Cars and Batch Boxes
Derricks
Electric Hoists
Steam Hoists
Locomotives
(24 in., 36 in. and std. ga.)
Paving Mixers
Portable Track
Relaying Rail
Steam Hammers
Steam Shovels
Steel Piling

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Steam Shovels

1—Thew Model "O," traction wheels, ½-yd. dipper.
1—Model 31 Marion, caterpillar traction, high lift boom, 22 ft. 6 in., dipper stick, 18 ft. 6 in., ¾-yd. dipper. One year old.
2—Erie Type "B," traction wheels, ¾-yd. dipper.
2—Marion 28, traction wheels, ⅝-yd. dipper.
3—Marion 60, standard gauge, 2½-yd. dipper.

Locomotives

1—18x24, 50-ton, 6-wheel Switcher, standard gauge.
4—21x30, 95-ton Consolidations, standard gauge.
3—10x16, 18-ton Saddle Tanks, 36-in. gauge.

Cars

20—4-yd., 36-in. gauge Western.
2—Western Spreaders, standard gauge.

Railroad Ditchers, Speeder Cars, Concrete Mixers, Clamshell Buckets, Pumps, Etc., Etc.

All of above located at our shops, Pittsburgh.

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Cars, Coaches, Steam Shovels, Locomotive Cranes, etc.

Detailed specifications, photographs, etc., upon request.

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(Est. 1889)
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Branch, Pittsburgh, Pa.

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STEAM SHOVELS
Bucyrus 70-C, Osgood 73, Railroad Type.
Marion, 20, 40, 41, 60, 75 Railroad Type.
Marion 37, 36, 32, 30, 28 and 21 Tract. & Cats.
Bucyrus 50-B, 35-B, 20-B and 18-B Cats.
Erie A and B Tract. and Cats.
Osgood 18 Tract. and Cats.
2—Model 21 Marion Flexible Cats. Special Price.

DUMP CARS
15—3-yd. 36-in. G. Western Wood Beams.
16—3-yd. 36-in. G. K. & J. Wood Beams.
7—3-yd. 36-in. G. Continental Wood Beams.
6—1½-yd. 24-in. G. Western Wood Beams.

LOCOMOTIVES
1—9x14-36-in. G. Porter.
1—7x12-36-in. G. Porter.

Locomotive Cranes, Paving Mixers, Road Rollers, Air Compressors, Engines, Boilers, Concrete Mixers, Clamshell Buckets, Road Builder's Equipment, Steam, Gas and Electric Hoists.

UTILITY EQUIPMENT COMPANY
Union Bank Bldg., Pittsburgh, Pa.

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1—Osgood ¾ cu. yd. caterpillar, new August, 1924. Shop number about 1430. High lift, 20-ft. boom, 15-ft. dipper stick, boom hoist and counter weight. 1—23-ft. Dipper Handle with ½-yd. dipper, for trench work; never used.
EDWARD W. PETERS, Danville, Pa.

FOR SALE
¾-yd. Osgood Shovel
High lift, caterpillar, used only four months. Located Pennsylvania.
Immediate Delivery
FS-907, Engineering News-Record
10th Ave. at 36th St., New York City

FOR SALE
Marion Steam Shovel
1—Model 31
E. W. COONS COMPANY
Coons-Thouin Bldg., Hibbing, Minn.

1—Haiss Path Digger Type "0" with 26 hp. Waukesha Engine, rebuilt, $2,500.00.
1—Haiss Path Digger Type "0" with 10 hp., 2 or 3 phase electric motor, rebuilt, $2,100.00.
1—Haiss 20-ft.-18-in. Belt Conveyor with gasoline engine, nearly new, $600.00.

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1—Blaw-Knox ½-yd. Bucket, rebuilt.
1—Haiss ½-yd. "Contractor" Type, rebuilt.
1—Haiss ¾-yd. "Contractor" Type, rebuilt.
1—Blaw-Knox ¾-yd., rebuilt.
1—Haiss 1-yd. "Contractor" Type, rebuilt.
1—Haiss 1½-yd. "Contractor" Type, rebuilt.

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Erie, Osgood, Marion, Thew and Bucyrus Revolving Shovels, various sizes.
Railroad Shovels Bucyrus, Marion, Osgood.

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Marion ¾-yd. Traction, Revolving.
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1—Marion, Model 20, R.R. type Shovel, with 1¼ cu.yd. dipper, in good working condition. Very attractive price.
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1—Marion, Model "32," high lift, 1¼ cu.yd. **Steam Shovel**, mounted on traction wheels. 85% new condition.
1—Marion, Model "32," 1¼ cu.yd. **Steam Shovel**, mounted on crawling traction trucks; used only two months.
Other Marion Shovels of all types and sizes.

Contractors' Equipment & Supply Company
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Telephone Spruce 8890

FOR SALE OR RENT

STEAM SHOVELS

2—Type B Erie. Shop Nos. 466 and 1064, mounted on traction wheels, ¾-yd. dipper.
1—Type B Erie Caterpillar. Shop No. 1973, ¾-yd. dipper.
1—Model 21 Marion, caterpillar. Shop No. 4294, ¾-yd. dipper.
1—Type O Thew. Shop No. 1777, extra high lift, 2/3-yd. dipper, traction wheels.
1—Model 31 Marion. Shop No. 3341, high lift, traction wheels, 1-yd. dipper.
1—Model 36 Marion, caterpillar. Shop No. 4727, 1½-yd. dipper.
3—70-C Bucyrus, Shop Nos. 1195, 1196 and 1197; 2½-yd. dippers.
3—70-ton Bucyrus. Shop Nos. 939, 977 and 1233, 2½-yd. dippers.
2—60C Bucyrus. Shop Nos. 1286 and 1388, 2½-yd.
3—Model 60 Marion. Shop Nos. 1301, 2100 and 2238, 2½-yd. dippers.
1—Model 61 Marion. Shop No. 2824, 2½-yd. dipper.
1—Model 75 Marion. Shop No. 2112, high lift boom, 2½-yd. dipper.
1—Model 80 Marion, Shop No. 1312, 4-yd.
1—Model 92 Marion. Shop No. 3768, 4-yd. rock dipper.
1—95-C Bucyrus. Shop No. 1235, 4 yd.

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1—Boom for Marion 60 or 61 Shovel, length 35 ft., 22-ft. dipper arm, 1½-yd. dipper, long jack arms, etc.

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2—20-yd. Western all steel Air Dump Cars, chain lock, vertical dump cylinders.
3—16-yd. Western Air Dump Cars.
19—12-yd. Western Air Dump Cars, 19-ft. beds, box girder doors.
11—12-yd. Western Air Dump Cars, 19-ft. beds, box girder doors, vertical dump cylinders, 60,000 lb. capacity trucks.
18—12-yd. Western Hand Dump Cars, 19-ft. beds, 60,000 lb. cap. trucks.
1—12-yd. Oliver All-steel Hand Dump Car. Cars.
12—8-yd. Western 36-in. gauge Side Dump Cars, steel draw sills, wood beds.
3—4-yd. Western 36-in. gauge Dump Cars, wood sills and wood beds.
5—4-yd. Western 36-in. gauge heavy duty Side Dump Cars, with steel draw sills and truss rod doors.

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1—Std. gauge Jordan Air Spreader, No. 262. All steel, 100,000 lb. capacity.
2—Std. gauge Western Spreader Cars.
1—36-in. gauge Western Spreader Car.
1—36-in. gauge Oliver Spreader Car.

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1—19x24 Baldwin 6-wheeled Saddle Tank. Shop No. 49553, built 1918. Weight 67 tons, air brakes, 180 lbs. steam pressure.
1—18x24 Brooks 6-wheeled Switcher, with tender. Shop No. 1778. Wt. 50 tons.
2—17x24 Davenport 6-wheeled Switchers, with tenders. Shop Nos. 1268 and 1269. Steam pressure 180 lbs. Wt. 47 tons.
1—17x24 Schenectady 6-wheeled Switcher with tender. Shop No. 2956. Wt. 44 tons.
1—16x24 Vulcan 4-wheeled Switcher, with tender. Shop No. 1764. Steam pressure 180 lbs. Weight 40 tons.
1—16x24 Davenport 4-wheeled Switcher, with tender. Shop No. 860. Steam pressure 170 lbs. Wt. 38 tons.
1—16x24 American, 4-wheeled Saddle Tank. Shop No. 59402, built 1918. Wt. 49 tons, A.S.M.E. boiler, 180 lbs. pressure, air brakes.
1—16 x 22 C. M. & St. P. Ry., Class J-2, 4-wheeled switcher. Weight 32 tons.
1—14x20 Vulcan 4-wheel Saddle Tank. Shop No. 1741. Wt. 36 tons, air brakes.
1—13x18 Vulcan 4-wheel Saddle Tank. Shop No. 3163, built 1921. Wt. 33 tons, air brakes.
1—13x18 American Saddle Tank. Shop No. 55248, built 1916. Wt. 32 tons.
2—11x16 Davenport 4-wheeled Saddle Tank. Wt. 21 tons, A.S.M.E. boiler, 170 lbs., steel cab, steam brakes.
1—11x16 Davenport 4-wheeled Saddle Tank Locomotive. Shop No. 1027. Wt. 20 tons. Steam brakes.

36-in. Gauge

8—11x16 Davenport Dinkies. Weight 21 tons, A.S.M.E. boilers, 170 lbs. steam, steel cabs, steam brakes.
2—10x16 Porter Dinkies. Shop Nos. 3399 and 4661. Weight 18 tons. 150 lbs. steam.

24-in. Gauge

1—7x12 Davenport Dinkey. Shop No. 1202. Weight 9 tons.
1—7x12 Vulcan Dinkey. Shop No. 2345. Weight 9 tons.
1—6x10 Davenport Side Tank Dinkey. Shop No. 1307. Wt. 7 tons.
1—6-ton Whitcomb Gasoline Locomotive. Shop No. 1259.

DRAGLINE EXCAVATORS

3—Class 24 Bucyrus Steam. Shop Nos. 3445, 3500 and 3671, skids and rollers, 85-ft. to 100-ft. booms; 3½, 4½ or 5-yd. Page buckets.
2—30B Bucyrus, steam. Shop Nos. 3640 and 3641, caterpillars, 40-ft. booms, 1-yd. Page buckets.

CRANES

2—Erie B Cranes. Shop Nos. 466 and 1064, 32-ft. or 36-ft. boom, ⅝-yd. Williams clam, traction wheels or standard gauge truck.
1—25-ton Industrial 8-wheeled, M.C.B. Shop No. 3261, 55-ft. boom with 20-ft. extension, 1½-yd. clam shell bucket.
1—10-ton Industrial, 4-wheeled. Shop No. 1989, 40-ft. boom, bucket operating.
1—20-ton McMyler, 8 wheeled, Shop No. 388, 45-ft. boom, 1¼-yd. O. & S. clam.
1—Gantry Crane. New in 1919; 48-ft. boom, 15-ton cap. at 18-ft. radius; 7-ft. 10½-in. gauge, 12-ft. wheelbase, self-propelling. Base of boom 17 ft. above track. Bucket-operating drums. Wt. 50 tons.

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8—Camp Cars. About 36 ft. long, with equipment.
1—6x10 D.C., D.D. Lidgerwood Hoist, with 36x90-in. boiler.
1—6½x10 D.C., D.D. American Hoist, with butt strapped boiler.
1—7x10 D.C., D.D. Lambert Hoist, without boiler.
1—7x10 D.C., D.D. Flory Hoist, without boiler.
2—1½-yd. Page Dragline Buckets.
5—Mead-Morrison 1½-yd. Clam Shell Buckets.
2—1¼-yd. O. & S. Coal Loading Clam Shell Buckets.
1—1-yd. Owen Clam Shell.

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(Successors to Clapp, Norstrom & Riley Equipment Co.)

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Jaw Crushers, 7x13 in. to 20x50 in.
Crushing Rolls and Hammer Mills

PAVERS CRANES ROLLERS

1—Rex 14E **Paver.**
3—Lakewood 14E **Pavers.**
1—Koehring 14E **Paver.**
1—Byers Half Caterpillar **Crane.**
1—New York, 10-ton, 3-wheel **Roller.**
1—Buffalo, 10-ton, 3-wheel **Roller.**
1—Wide gauge **Traveling Derrick,** 60-ft. boom.
1—No. 4 **Keystone Grader.**

The Cable Excavator Co.
Fernwood, Delaware Co., Penna.

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Each item priced—Special discount to Dealers.

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Glass Enamel steel tanks, Detroit and Pfaudler make, approximately 35,000 gal. capacity. By reason of being bolted sectional, they can be cut down to any size required. Can be used for special liquids requiring glass enamel, and the price is cheap enough for them to be used for ordinary storage. Blue-print and photographs on request.

JOS. GREENSPON'S SONS Iron & Steel Co.
Dept. M. St. Louis, Mo.

The GREY *Line*

LOCOMOTIVE CRANES

FOR SALE OR RENT

2—20-ton, 8-wheel, BROWN HOIST, built 1923 and 1921, A.S.M.E. boiler, 50-ft. booms, bucket operating, like new.
1—40-ton, 8-wheel INDUSTRIAL, new 1920, 90 ft. boom, double drum; excellent condition.

LOCOMOTIVES

2—16x24, Std. Gauge, AMERICAN, 50-ton, 4-wheel Saddle Tank, built 1920, A.S.M.E. boiler, 180-lb. pressure; steam and air brakes, used few months, overhauled, guaranteed like new.

DUMP CARS

50—4 yd. and 5 yd., 36-in. gauge, WESTERN and K. & J., Heavy Duty, Steel Draft-beams.
100—12-yd. Std. Gauge, WESTERN, Hand Dump, Steel Draft-beams.

STEAM SHOVELS

4—TYPE B ERIE, full revolving, new 1923 and 1922, ALL STEEL CATERPILLARS, ¾-yd. dippers; High Lift and Standard Booms, excellent condition.

Grey Steel Products Co.
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1—Hulett 4-yd. **Clam-Shell Dredging or Ore Bucket.** It can be used on Derrick Boom or Ore Bridge. New, never used.

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1—Model 29 Osgood revolving—Shop No. 1118 (special high lift), mounted on caterpillars, 30-ft. boom, 20-ft. dipper stick, ¾-yd. dipper.
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1—Model 212 Marion (revolving). Shop No. 4020. New Sept. 1923, mounted on trucks, 55-ft. boom, 34-ft. dipper stick. 1¾-yd. dipper
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LOCOMOTIVES

2—Type 060 Baldwin, 55-ton, 6-wheel Switchers, standard gauge.
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1—Northwest, gasoline, mounted on caterpillars, 40-ft .boom.
1—20-ton Brownhoist, 8-wheel, M.C.B., butt strapped boiler, 40-ft. boom.
1—17-ton Ohio, 8-wheel, M.C.B., A.S.M.E. boiler, 45-ft. boom.
1—20-ton Ohio, 8-wheel, M.C.B., A.S.M.E. boiler, 50-ft. boom.

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5 ton Westinghouse-Baldwin trolley locomotive, 36 to 42 in. gauge. 220 volt DC.
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2—25-ton Industrials, 50-boom A-1.
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1—25-40-ton Brownhoist, 75-ft. boom, Electric.
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¾-yd. Erie Traction and Caterpillar.
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1½, 4, 6, 12, 16, 20, 30-yd. capacity 5 and 10 ton CATERPILLAR TRACTORS—SPREADER CARS.

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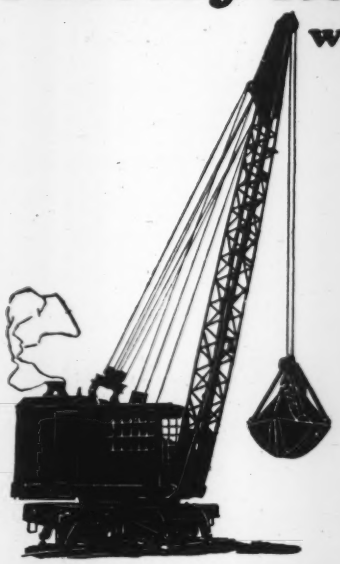

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Plant, Grand Ave. and 35th Street, Corona, L. I.

One Trumbull double throw switch.
Catalogue No. 70324. 200 amp., 3 poles, 250 volts.

One Safety Auto. Sock Switch No. C-35630.
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Two auto. cut-in. and cut-out switches, controlled by water.

One gravity oil system.

Ten gallon tank.

Two 6 in. check valves.

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Manufactured by Star Electric Motor Co., Newark, N. J.
Two Motors.
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Four inch intake. Six inch outlet.
400 gallons per minute.
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H.P.	40
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Volts	220
Amp.	100
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Two electrically controlled switchboards.
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192 Inside Corners — 96 Outside Corners

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2—"Lidgerwood" Class "B," Steam Dragline Excavators, mounted on four double flanged wheels. Boom is 60-ft. with 15-ft. extension and handles 1½-yd. or 2-yd. bucket.

1—"Marion" Model 21 Dragline Excavator and Crane, mounted on caterpillars; 32-ft. boom, ⅝-yd. bucket, entire drag or clam shell.

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1—12-in. B.H. "Morris" horiz. cent. unwatering pump, dir. conn. to steam engine.

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2—Weinman steam-driven automatic.

1—Dean, 7½x5x6.

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1½-yd. capacity.

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7½ to 500 hp.—220-440-2200—A.C.

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¾ and 1½-yd., 24-in. ga., V-shape side dump.

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Steel guy derricks, 70-ft. boom, 82-foot mast. Wood guy and stiff-leg 45-ft. boom, 50-ft. mast. American and Byers and Thomas Hoists.

1—10-TON HUBER STEAM TRACTOR

LOCOMOTIVE

1—18-ton Davenport standard gauge.

50—TRANSFORMERS—50

6/10 kva. to 400 kva.

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10-12-15-in. Iron Body Bronze Mounted.

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Spud Hoists for use on dredge or scow.

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Direct Electric Driven	5011 ft. Ingersoll	PRE-2	3-60-2200 v.
	4000 ft. Worthington		3-60-2200 v.
	3633 ft. Ingersoll	PRE-2	3-60-2200 v.
	3460 ft. Chicago		3-60-2200-550 v.
	1730 ft. Chicago	OCE	3-60-2200-550-480-240 v.
	1302 ft. Ingersoll	PRE-2	3-60-2200 v.
	1050 ft. Worthington Feather Valve		3-60-2200 v.
	714 ft. I-R Imperial (Clearance Control)		3-60-440 v.
Belt Driven	1190 ft. Ingersoll	XB-2	
	888 ft. Ingersoll	XB-2	
	688 ft. Ingersoll (40 lbs.)	ER-1	
	599 ft. Ingersoll	XB-2	
	478 ft. Sullivan	WJ-3	
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Steam Driven	4384 ft. Ingersoll	ORC-3	
	2570 ft. Worthington (60 lb.) Air		
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	1955 ft. Ingersoll	XPV-3	
	1723 ft. Ingersoll	XPV-3	
	1666 ft. Ingersoll (60 lb.)	XPV-4	
	1190 ft. Ingersoll	X-3	
	888 ft. Ingersoll	X-2	
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1—35-hp. Scotch Marine, 100 lb. Donkey Boiler, NEW
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1—1000-kw. Allis Turbine, 3-60-4600-v.
1—750-kw. General Electric, 3-60-2200-v.
1—300-kw. Allis Turbine, 3-60-600-v.
1—100-kw. G. E. Turbine, 3-60-600-v.
1—250-kw. Delhi Turbine, NEW, D.C. 125-v.
1—750-kw. G. E. Converter, D.C., 240 v.
1—500-kw. G. E. Converter, D.C., 240-v.
1—300-kw. G. E. Converter, D.C., 240-v.
1—500-kva. G. E. Transformer, 13,000 to 440-v.
6—333-kva. G. E. Transformers, 13,800 to 2200-v.

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No. 105, new 1923—CUT ONLY ¾ MILE.

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Also 10-9-8-7½-6-5-4 and 3 Crushers.

120 HP. GASOLINE ENG., PORTABLE
BUCYRUS No. 225 ELECTRIC

15T LOCO CRANE

8 wheel—38-ft. boom.

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Trench Machines and Backfillers

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Factory Rebuilt Steam and Gasoline

Little Giant Road Cranes

Completely reconditioned and guaranteed by the manufacturers.
Prices exceptionally low.

The Locomotive Crane Company of America
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TRENCH EXCAVATORS

2—Austin 0042—Cheap.
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48—Parsons, steam, located N. Y. C.
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Might rent on good jobs.

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STANDARD GAUGE LOCOMOTIVE

10x16 s.t., built by American Locomotive Company.

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10-ton O&S 4-wheel standard gauge.

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100 tons 90 lb. section.
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100 tons 80 lb. section.
20 tons 20 lb. section.
3000 ft. 20 lb. Portable Track.

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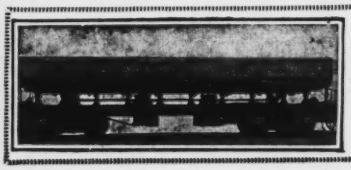

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100,000 lbs. capacity—all steel—perfect order.

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It costs no more to rent NEW

PULSOMETER STEAM PUMPS

Direct from the Factory—Backed by Service

You get *new* pumps. And eventually you can own one by our convenient payment method. Remember charges are *no higher* for this factory proposition.

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For pressures up to 500 pounds. We will rent new Pulsometers fully equipped with all necessary hose and couplings—*complete*, ready for service, guaranteed.

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Let us know by letter, wire or phone (Chickering 2958). You can depend on the Pulsometer Company reputation for equipment and service.

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1—OSGOOD ¾-yard Caterpillar Type Steam Shovel—one year old—located near Chicago.

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60-ton American 6-wheel switcher.
40-ton Pennsylvania 4-wheel switcher.
70-ton 3-truck Shay geared.
42-ton 2-truck Shay geared.
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30-ton 8-wheel McMyler, 70-ft. boom.
18-ton 8-wheel O. & S., 45-ft. boom.

Also other locomotives and locomotive cranes and steam shovels and steel rails.

Complete list on request.

Birmingham Rail & Locomotive Co.
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CRANES

LOCOMOTIVE CRANES

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1—20-ton Brownhoist, 8-wheel, D.D. 50-ft. boom, No. 6486.
1—20-ton Browning, 8-wheel, double drum, 50-ft. boom, No. 1149.
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5—Link-Belt, 90-ft. booms, full revolving, self-propelling, A.S.M.E. boilers, mounted on 30-ft. substructures. Perfect condition.

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2—¾-yd. Marion 21, traction wheels, New 1920 and 1923.
1—Marion 21, ¾-yd. dipper, cat. mounted, 1920.
1—¾-yd. Type B Erie, Cat. Mounted 1919.

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1—Austin with boom and bucket, gasoline operated, caterpillar mounted.

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1—75 hp. Maine Electric 2 Drum Hoisting Engine with 3-ph., 60-cy., 220/440-v. motor.
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Model 24—Parsons Gasoline operated Caterpillar. Mounted. Equipped with new side cutters.—Perfect Condition.

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Locomotive Cranes

1—15-Ton Brownhoist, 55-ft. boom, 8 wheel MCB.
1—15-Ton Brownhoist, 36-ft. boom, 8 wheel MCB.
1—15/20-Ton McMyler, 50-ft. boom, 8 wheel MCB.

Locomotive

1—20-Ton Porter Saddle Tank, Type 0-4-0 Standard Gauge.

Timber

150,000 ft. 12x12 LLY PINE.

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LOCOMOTIVE CRANES

Rebuilt—Immediate Delivery

BROWNING
15—25-ton, 38—50-ft. Booms
OHIO
25-ton 55, 50, 70 Boom
INDUSTRIAL
15-ton, 40-ft. Boom, Generator
ORTEN & STEINBRENNER
18-ton, 50-ft. Boom

BOILERS

2—80 hp. Locomotive Type
1—100 hp. Locomotive Type
1—125 hp. Locomotive Type
1—150 hp. Economic Portable

DERRICK CARS

1—25-ton 1—50-ton

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Pavers and Batch—All Sizes

A Shop Full of Contractors' Equipment of All Kinds

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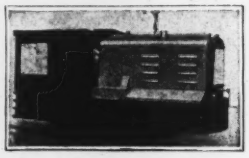

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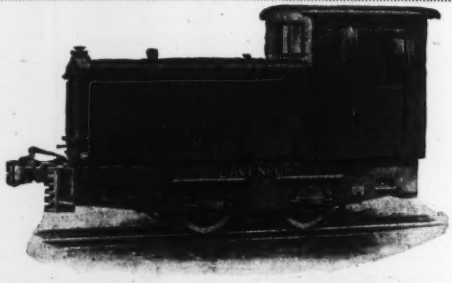

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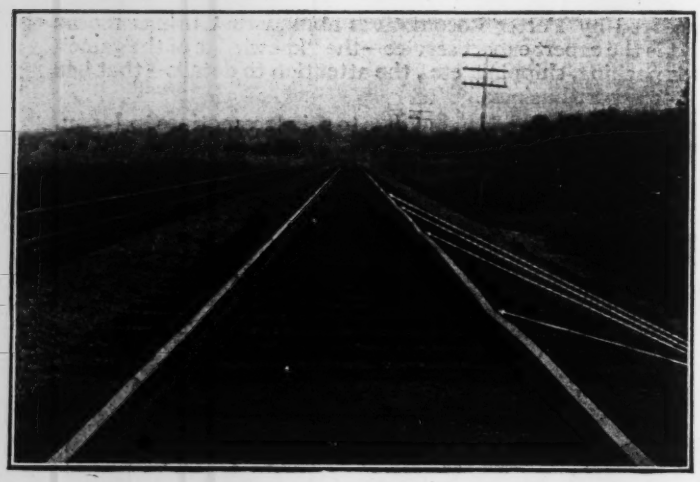

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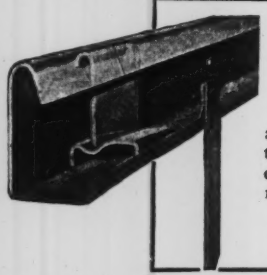

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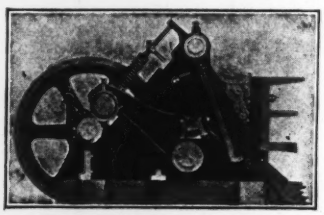

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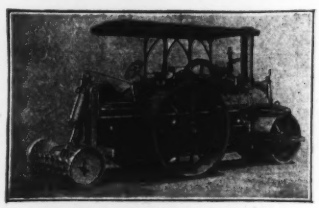

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2. proved themselves the most *uniformly* durable corrugated culverts under all conditions of service.
3. led the corrugated culvert field in spite of lower priced imitative materials for 20 years.

The Facts Are—

In the Analysis
In the Service Record

There is a manufacturer in almost every state and in Canada, making Culverts, Flumes, Siphons, Tanks, Roofing, etc., of genuine, rust-resisting Armco Ingot Iron. Write for full information and nearest shipping point on products in which you are interested.

ARMCO Ingot Iron

ARMCO CULVERT & FLUME MFRS. ASS'N, 215 North Michigan Avenue, Chicago

ARMCO CULVERTS

Look Under Your Roads for the Proof

Where can you buy more pipe service per dollar?

WHEN a sewer of Vitrified Salt Glazed Clay Pipe is laid it's laid for good; it can't possibly wear out because there is nothing in it that acid or electrolysis can harm.

Clay pipe is a permanent investment if ever there was one. For the economy of permanence and the security that goes with a sewer that's working right, specify Vitrified Salt-Glazed Clay Sewer Pipe.

Clay Products Association
Chamber of Commerce Bldg.
Chicago

VITRIFIED Salt Glazed CLAY
Sanitary Sewer Pipe
ENR 12-25F-BTG

Sewer and Conduit Rod Couplings
FELTON'S
Manufactured exclusively by us

Especially adapted to the cleaning of sewers and conduits. Special tools in connection with these on application.

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Patented

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—Use for all sewers, culverts, etc., over 36" in diameter.
—Write for descriptive booklet.

Manufactured in many Sections of the United States

We also specialize in large sizes of Vitrified Sewer Pipe—27" to 36" dia.

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HARDESTY METAL PRODUCTS H

FLUMES, GATES, PIPE and IRRIGATION SUPPLIES

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THE R. HARDESTY MFG. CO.
Denver, Colorado

NAVCO **National** NAVCO
POWER PIPING
National Valve and Manufacturing Co.
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You Can Know the Douglas Fir You Buy

The unusual requirements of lumber users engaged in railway, heavy and industrial construction have had the careful attention of The Long-Bell Lumber Company since the establishment of our first sawmill.

This long experience in knowing this particular branch of the trade was invaluable in working out the manufacturing problems at the new Douglas fir plant in Longview, Washington, where there is now available every facility for immediate manufacture of a complete line of items, especially for the heavy builder.

That you may be assured of obtaining Douglas fir products of the same careful manufacture that has long distinguished Long-Bell lumber and timbers in other species of woods, all our Douglas fir stock bears the dependable Long-Bell trade-mark.

No matter for what purpose specified, buyers of Douglas fir can also

"Know the lumber they buy."

THE LONG-BELL LUMBER COMPANY
R. A. Long Bldg. Kansas City, Mo.
Lumbermen since 1875

Long-Bell

Trade Marked **LUMBER**

Douglas Fir Lumber and Timbers; Southern Pine Lumber and Timbers; Creosoted Lumber, Timbers, Posts, Poles, Ties, Guard-Rail Posts, Piling; Southern Hardwood Lumber and Timbers; Oak Flooring; California White Pine Lumber; Sash and Doors.

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KREOLITE WOOD BLOCK FLOORS

"Outlast the Factory"

An excellent investment for machine shops, loading platforms, foundries, warerooms, pickling rooms and other parts of the plant where the floors receive hard wear.

Write today for our booklet—
"Kreolite Factory Floors."

Kreolite Grooved Block

We also furnish Kreolite Wood Blocks for Street Pavements, Bridge Floors and Stable Floors, treated ties, piling timbers fence posts, etc., framed to your plan, if desired, before treatment.

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Creosoted Cross Ties

Whether your Railroad be Steam or Electric, large or small—*you can only afford the best.* Our *Creosoted* Southern Yellow Pine *Hewn Cross Ties* are the *longest lived* and ultimately far the *cheapest.*

We also Manufacture and Creosote—Lumber, Switch Ties, Piles, Poles and other products.

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BLOCK FLOORS

Full Details and Specifications Upon Request

SOUTHERN WOOD PRESERVING CO.
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15.000.000 feet always in stock for immediate delivery

THE MOST EFFICIENT TIMBER-HANDLING PLANT IN THE WORLD

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Treated with PURE Creosote Oil — One reason why they are practically everlasting. Ask us to show you all their economic advantages.

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Powerful **LIGHTS** Portable

CARBIC MANUFACTURING CO.
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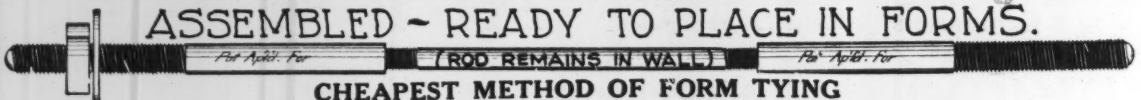
ASSEMBLED ~ READY TO PLACE IN FORMS.



CHEAPEST METHOD OF FORM TYING

Perfect Finish—Positive Strength—Easy Adjustment to line—Watertight
Rod left in wall costs no more than usual tie wire.

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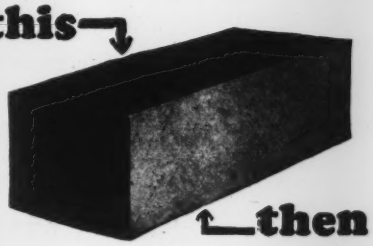

then this

DOZENS of communities have made a delightful discovery in the past few years. They have discovered that brick laid in pavements a generation ago *is actually worth more today than when laid.*

One after another has faced the need of taking up a pavement battered and roughened by 25 to 35 years of increasing traffic, only to discover that the brick when lifted out is not only in perfect shape for re-laying but, if offered for sale, could be sold for more than its original cost!

A few of the communities that have made this profitable discovery are Pensacola, Jacksonville and Duval County, Fla., Vicksburg and Meridian, Miss., Lancaster and Bucyrus, Ohio, Lynchburg, Va., Wheeling, W. Va., Sewickley and Butler, Pa., and Omaha, Nebr.—and there are scores more who will profit by the same fact in the next few years.

Pave for the future—pave for long life and low upkeep—pave for high salvage value—pave to outlast the bonds—pave with vitrified brick.

VITRIFIED
Brick
PAVEMENTS

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(Distributors MACK Paving Brick)
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Clydesdale Brick & Stone Co.
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Coffeyville Vitrified Brick & Tile Co.
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Globe Brick Company
East Liverpool, Ohio
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OUTLAST THE BONDS

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Patented Feb. 12, 1924

BULLIS the simple inexpensive FORM CLAMP *for* WALL-FORMS *and* COLUMNS

Thousands in use. One-piece—nothing to loosen. Use over and over—cannot wear out. Low in cost. Write for complete information.

1—Pass heavy gauge wire loop around column.
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3—Turn clamp until wire is tight.
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Save their cost on the first job

The only clamp made which automatically *locks* the timbers together—not requiring a load on the upright to keep the clamps on. Foolproof and simple.

We have sold 300,000 clamps for splicing, Shoring, Scaffolding, Bracing and Hoists. Working load—capacity of timbers. Wrenches and extra lockplates gratis. Write for circular. *Agencies All Over the World.*

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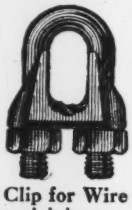
Atlantic Coast Agents: Richmond Screw Anchor Co., 243 Bush St., Brooklyn, N. Y.



Plain Clip for Wire Rope and lap joining round or distorted bars. Universally used and recommended.

This Mark
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—means that it's made of Marion certified malleable iron, offering great resistance to shock, having high elastic limit, resisting oxidation, wears better, is free from slag holes, shrinkage, cracks, etc., and is not subject to fatigue or crystallization.

Certified malleable castings for every purpose

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CONCRETE REINFORCEMENT

FLAT SHEETS, readily handled, quickly placed—Steelcrete, the ideal reinforcement. Saves, pays.

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UNIVERSAL Bar Spacers

Faster steel laying is assured where Universal Bar Spacers are used. Universal Bar Spacers tie the bars the correct distance from the bottom of the form and from each other. They are made up for your plans and tagged for quick, easy placing.

The double fold of metal under the bar holds the bar off the form even when the bar is walked on.

Write for prices on Universal Spacers and Chairs.

Universal Form Clamp Co.
Sheffield Ave. and Montana St., Chicago, Ill.
New York Office: 51 E. 42nd St.

Master Mix

SAFEGUARDS W[illegible]CKWORK

The Pershing Square Bldg., New York. Yorke & Sawyer, Architects —C. T. Wills, Contractor This is but one of many winter-built buildings of the first magnitude whose brickwork has been safeguarded and mortar joints waterproofed by the use of Master Mix.

Engineers recognize the necessity of a waterproof brick mortar joint and the difficulty of securing it in freezing weather. Master Mix produces waterproof joints at freezing temperatures and saves its cost by maintaining warm weather workability, eliminating a principle cause of delay in winter construction.

THE MASTER BUILDERS COMPANY
Cleveland, Ohio Irvington, N. J.

Charging Goods at Wanamaker's

Mrs. Smith prefers to shop at Wanamaker's. Whether she charges a pair of gloves or a platinum pendant there's no embarrassing delay while the clerk looks up her credit. It isn't because Mrs. Smith is so well known or that Wanamaker's is careless about credit. Quite the contrary.

While the purchase is being wrapped, the floor manager steps to a P-A-X telephone. By dialling a number he connects himself directly with the credit section which handles the O-T group of names. The credit operator notes the name and address, consults the rotary index at his side and if the account is correct replies "O.K."

The Credit Checking System is but one of the many Automatic Electric Services of the P-A-X that saves time and money and builds goodwill. Others are the Code Call, Conference Wire and Executives' Priority Service.

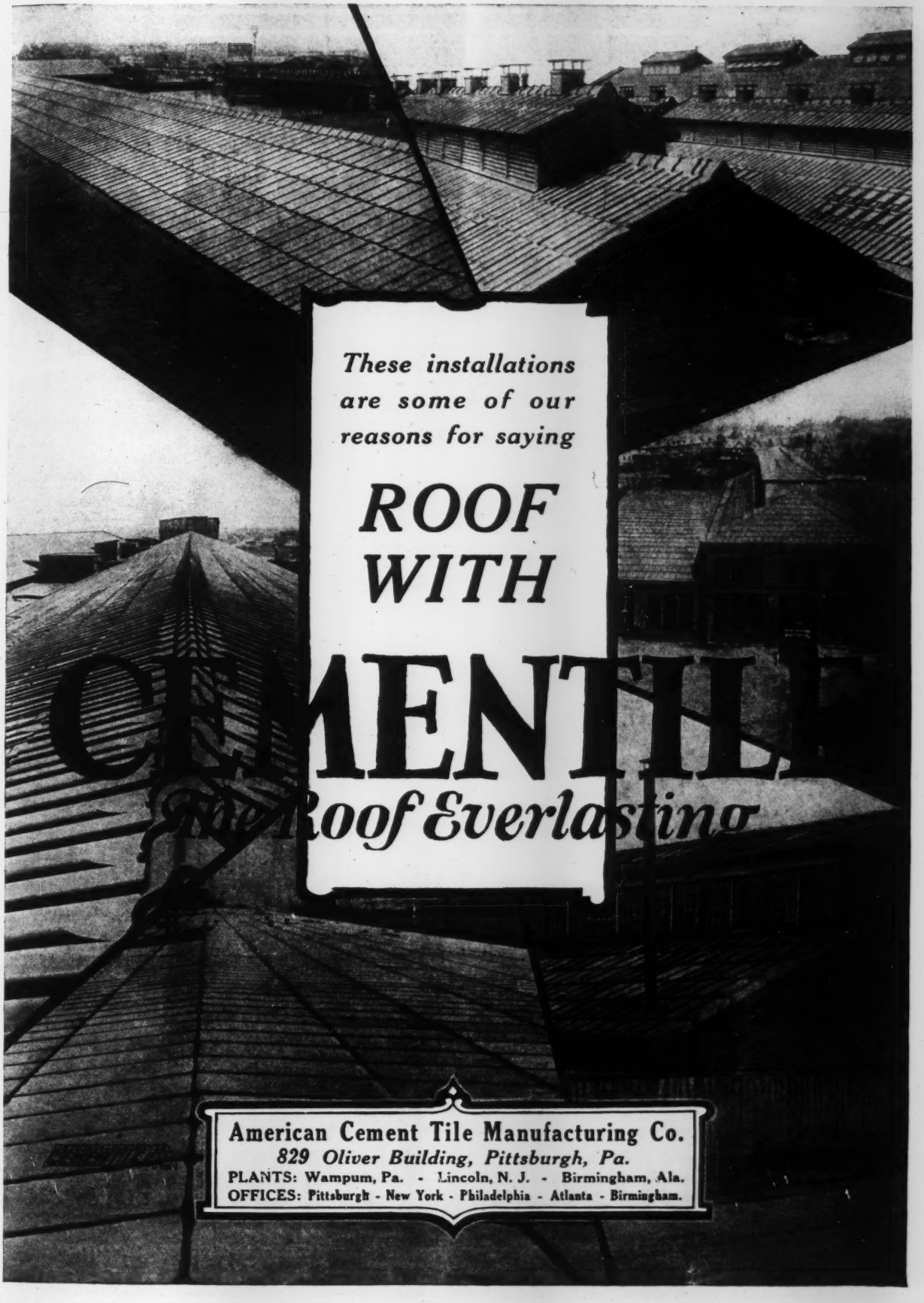
For 24 hours a day the P-A-X handles all inter-communication calls instantly, accurately and automatically. There is no operator to delay connections, give the wrong number or to "listen in" on conversations.

To nearly 2,000 organizations, in every field of business, the P-A-X has proved itself a vital necessity and has paid for itself in a short time by saving operators' salaries.

The P-A-X is similar to the Automatic Telephone equipment being so widely adopted for city service. It augments and completes but neither supplants nor connects with local or long distance telephone service.

Automatic Electric Company

Originators of the P-A-X. For more than 30 years the engineers, designers and manufacturers of the Automatic Telephone in use the world over. Home Office and Factory, CHICAGO, ILL., *Branch Offices:* New York, 21 East Fortieth St.; Cleveland, Cuyahoga Bldg. Representatives in all principal cities. *In Canada—Address:* Northern Electric Co., Ltd., 121 Shearer St., Montreal, P. Q. *Abroad—Address:* International Automatic Telephone Co., Norfolk House, Norfolk St., Strand, London, W. C. 2, England. *In Australia—Address:* Automatic Telephones, Ltd., Mendes Chambers. Castlereagh St., Sydney, Australia.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The Roof Everlasting
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PLANTS: Wampum, Pa. - Lincoln, N. J. - Birmingham, Ala.
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No One Ever Had to Replace a Floor of IRVING PATENTED SUBWAY FLOORING

It's tough steel throughout, amply strong for the load it is intended to carry. It has never worn out—even under 12 years of the heaviest New York street traffic. When you floor with ***Subway***, you've paid once and for all, for a floor that will probably outlast its surroundings. Have you read Catalog 4A5?

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·GRATING PRODUCTS·

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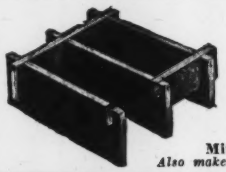
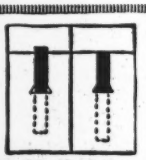


"MITCO"
INTERLOCKED GRATINGS



No bolts. No rivets. Non-clogging. Every joint locked by metal spread in dovetail. Write for Catalog G-5A.

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Also makers of "S.M.C." for fireproofing Steel Structures.

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Counterbalanced-Truckable

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THE PEELLE COMPANY, BROOKLYN, N. Y.
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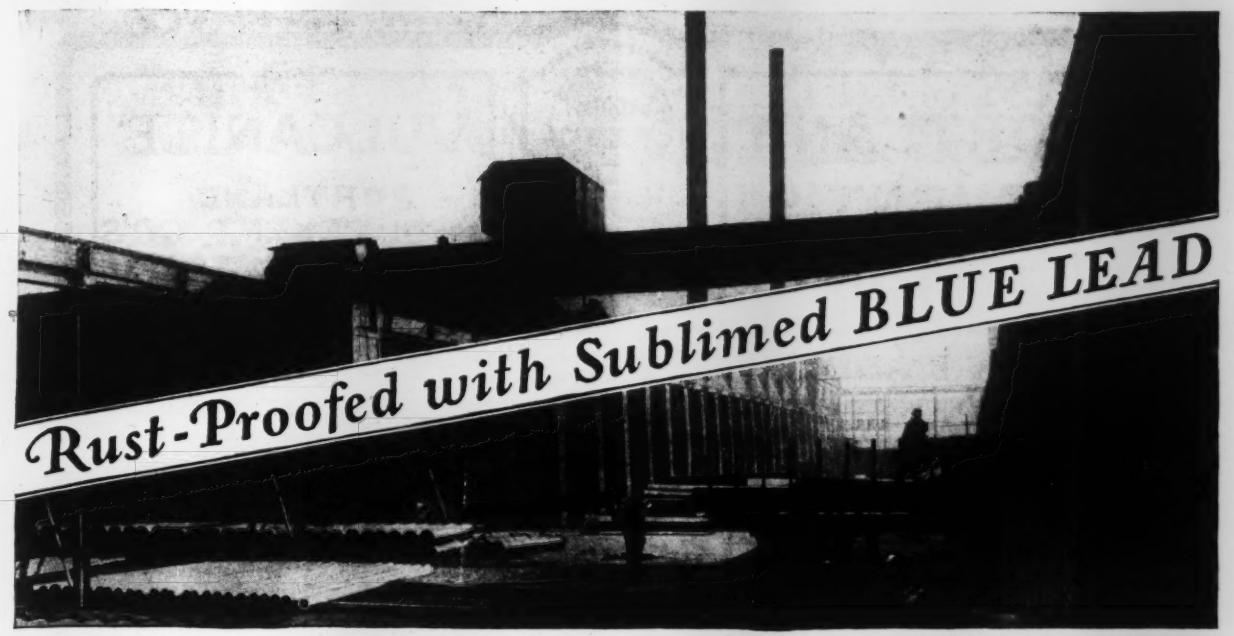
BOOKLET ON REQUEST

For Dampproofing and Decorating Masonry Walls

For Preserving Brick-Stone-Stucco-Concrete

THE TRUSCON LABORATORIES — DETROIT



Traveling Crane—American Spiral Pipe Works

Rust-Proofing with Lead at a Cost of $3.22 per 1,000 Square Feet

Send for your copy of "Fighting Rust with Sublimed Blue Lead"

SUBLIMED Blue Lead in Oil has been rust-proofing the plant of the American Spiral Pipe Works at Chicago for the past fourteen years. By its use this company is getting the undisputed value of a basic lead pigment for rust-inhibitive painting at a total material cost of $3.22 per thousand square feet of coverage.

Exposed to many different conditions, indoors and out, to excessive heat and corrosive gases as well as to the corroding action of the elements, Sublimed Blue Lead in Oil has successfully met every requirement for a rust-inhibitive paint at this plant.

As well, the head painter states that Sublimed Blue Lead in Oil flows from the brush so smoothly and spreads so easily over the metal surface that his painters can cover a greater area in a day, and still produce a paint film that is free from brush marks, breaks, runs, or alligatoring.

One hundred pounds of Sublimed Blue Lead in Oil will rust-proof 5216 square feet of iron or steel of average smoothness. This is equivalent to a surface a foot wide and nearly a mile long. It is practically double the performance of the pigment most used for rust-inhibitive painting.

Have you ever figured your cost of protecting metal per thousand square feet per year? Users of Sublimed Blue Lead find that theirs are exceptionally low, and that the results have been uniformly good under many different conditions.

Send for your copy of "Fighting Rust with Sublimed Blue Lead"—a Rust-Proofing Manual.

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— The E. P. L. Co., 1924

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All types for factory, power house and office. Continuous steel sash for monitors and sawtooth construction. Operating devices for all types of movable sash and doors. Steel skylight and ventilators, steel office partitions, hinged steel doors, sliding steel doors.

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ALLISON STEEL PRODUCTS CO.
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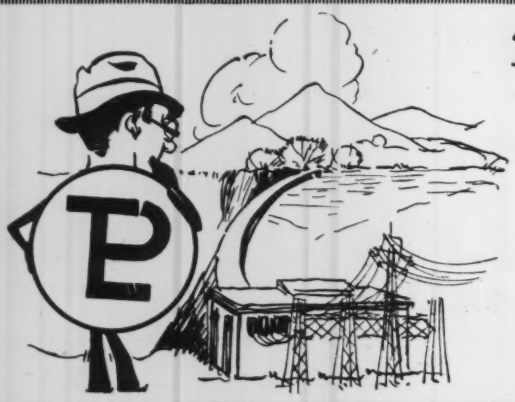

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Cement-Gun Work Contractors
Do not confuse us with the man who makes the machine
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Raymond M. Hood, Architect
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THE MOST UNIQUE BUILDING OF ITS KIND IN AMERICA

A unique departure from established architectural practice has caused public attention to focus on New York's first black brick office building—trimmed with gold.

Its beauty and unusual color effect is brought out by the non-fading black joints produced with "R.I.W." Edinburgh Black Mortar Color, and emphasized by touches of gold leaf applied over a water-proof coat of "R.I.W." Liquid Konkerit (pat'd) on the stone trimmings.

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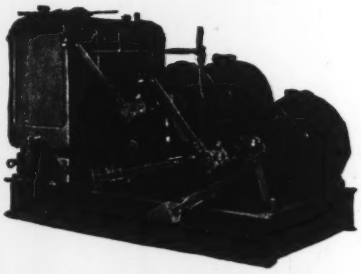

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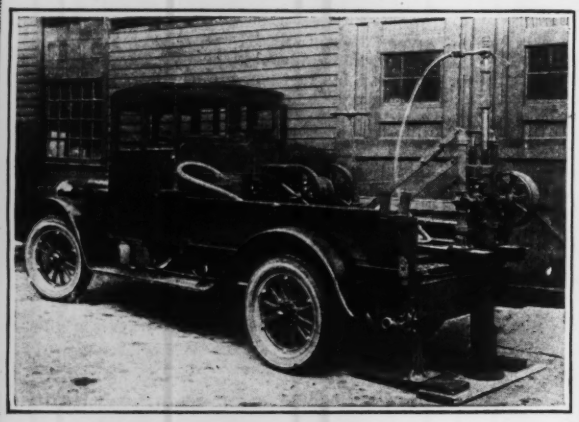

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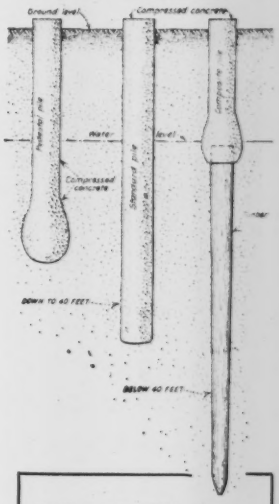

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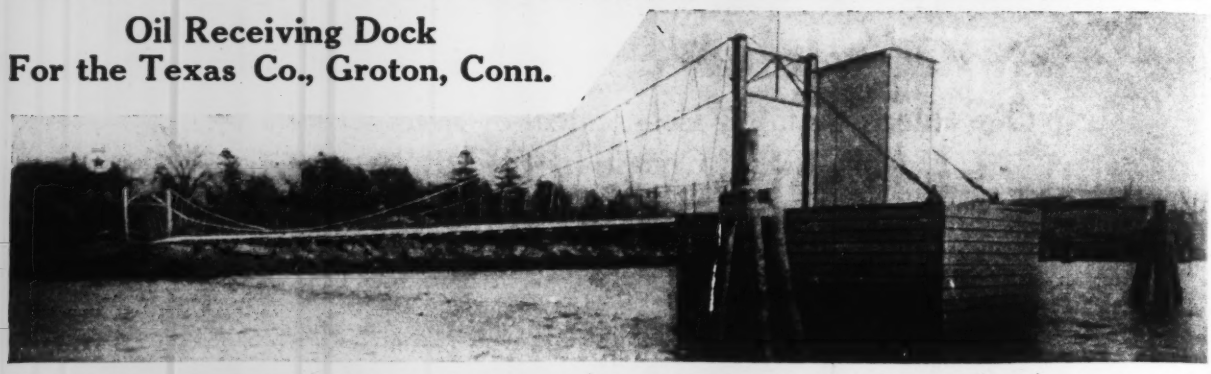

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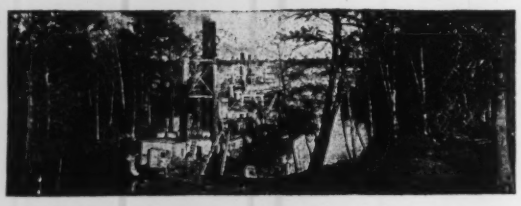

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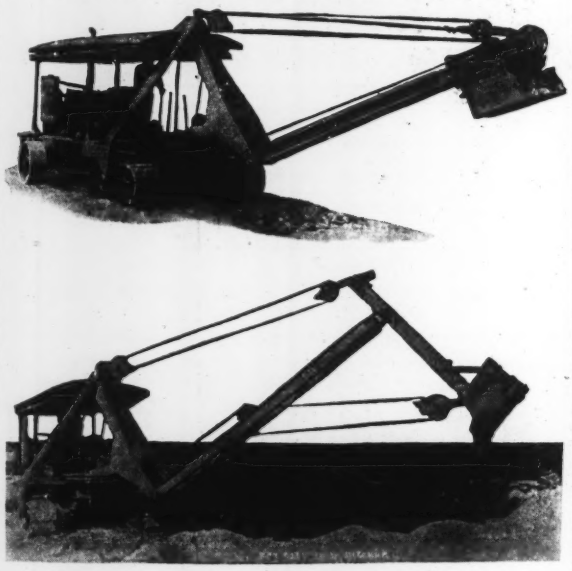

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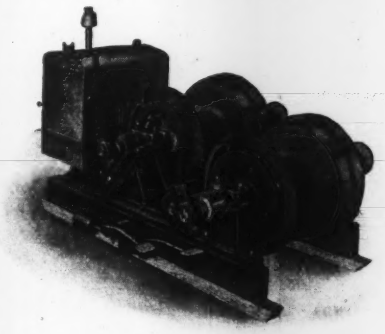

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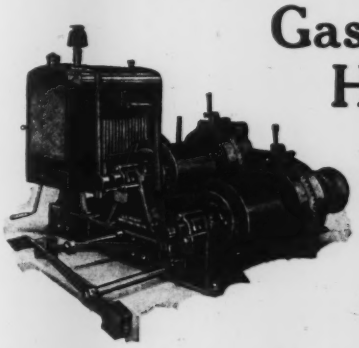

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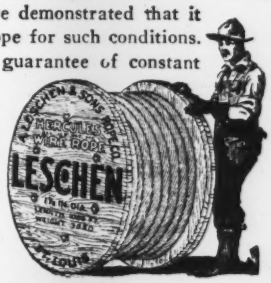

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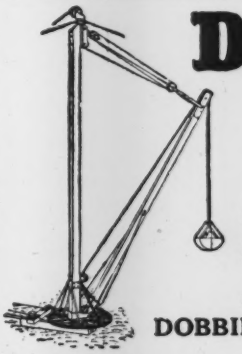

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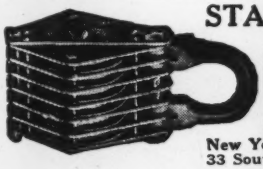

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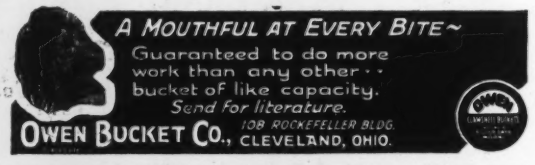
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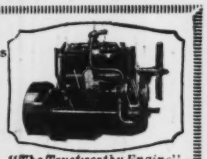

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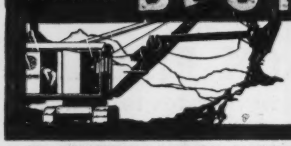

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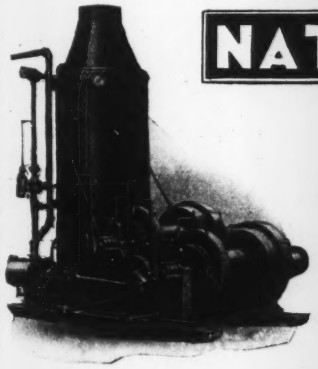

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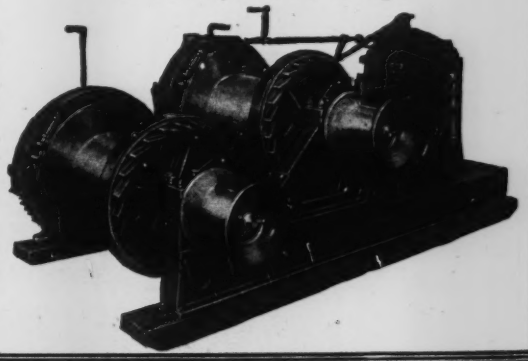

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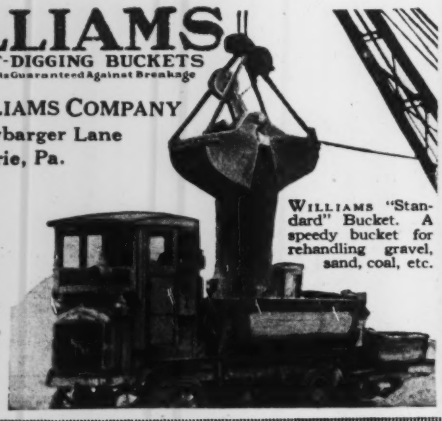

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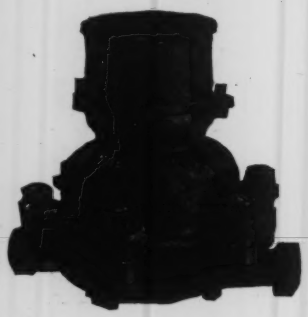

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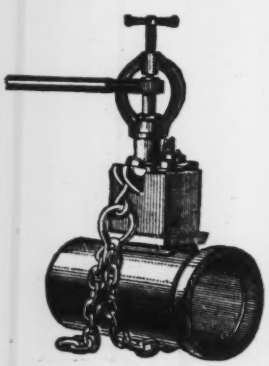

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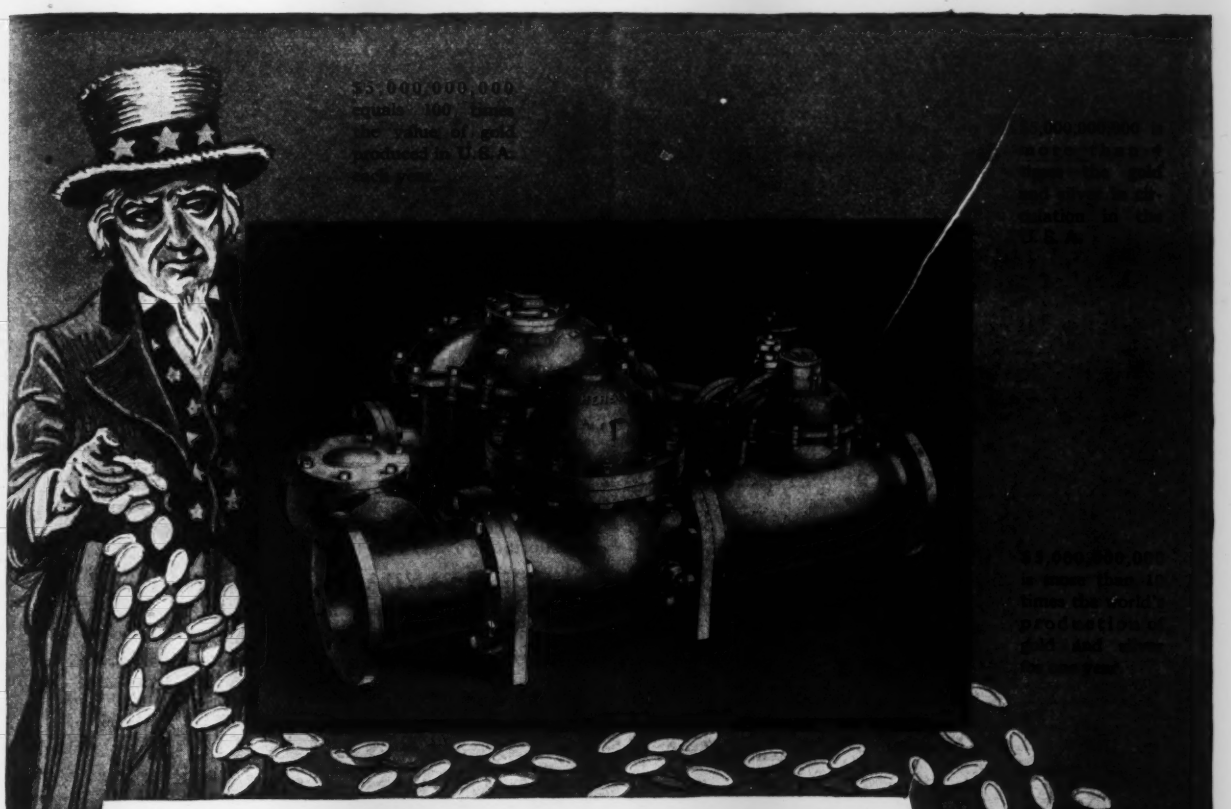
"VENTURI" Registered Trade Mark
For Water, Sewage, Gas, Air, Steam—
in fact everything that flows.
Bulletins on Request.
BUILDERS IRON FOUNDRY, Providence, R. I.

Only reliable products can be continuously advertised



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All the gold and silver in circulation in the United States only equals one fourth the value of the property protected by fire services on which Hersey Detector Meters are installed.

$5,000,000,000 valuation of insured property... Unrestricted endorsement of every stock and mutual insurance company in the country... Used by more than 800 water departments and water companies.... Nearly 7,000 installations... Twenty years' practical experience.

That, in brief, is the story of the Hersey Detector Meter, the one outstanding fire service meter for all requirements. Catalog on request.

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THE next time you hear of a death from typhoid fever remember that it was possibly caused by polluted drinking water and could have been avoided for an investment of less than a thousand dollars and an operating cost of less than one cent per person a year.

W & T Chlorinators protect the health of 60 million people in North America.

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Manufacturers of Chlorine Control Apparatus
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MUNICIPAL — INDUSTRIAL
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FILTERS
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COLD WATER! Effectively sterilized with Chlorinated Air. Perfect control of dosage. No deposits of gummy, chlorine hydrate.
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Shear, Flap and Butterfly Valves
FLEXIBLE JOINTS
COLDWELL-WILCOX CO
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WATER-*fit for use*
Filtration and Water Softening Plants
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Hot—Cold—Intermittent—Zeolite
Complete Engineering Service
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Deliver Full Capacity
We are glad to confer with municipal officials & Water Companies.
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For Purifying Water
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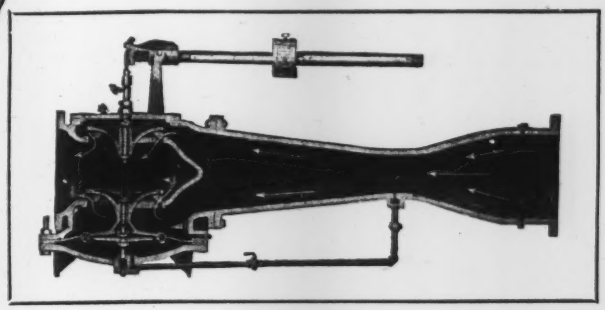

Simplex Rate of Flow Controllers

Simplex Controllers have been universally adopted by the most experienced Engineers, Water Works Managers and Filter Contractors, whenever the rate of flow of water or any other liquid must be maintained at a constant rate.

The simplicity in design of the Simplex Controller—the one set of moving parts, all connected and acting together—affords continuous and satisfactory operation, eliminating frequent adjustment and the constant care of experts.

The Simplex Controller in the filter plant overcomes surging, breaking of the filter beds and sudden decreases in bacterial efficiency, and maintains a constant rate of flow.

Due to their performance Simplex Controllers have been specified at Baltimore, Md.; Wheeling, W. Va.; Memphis, Tenn.; Omaha, Neb.; Fairmont, W. Va.; Buffalo, N. Y.; Cleveland, Ohio; Bay City, Mich.; and many other cities in the United States and foreign countries.

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Pittsburgh, Pa., C. C. Behney, Union Bank Bldg.
Chicago, Ill., A. F. Barron, Room 1510, 30 North Michigan Boulevard
San Francisco and Los Angeles, Cal., Water Works Supply Co.
Canada, Francis Hankin & Co., Montreal and Toronto, Ont.
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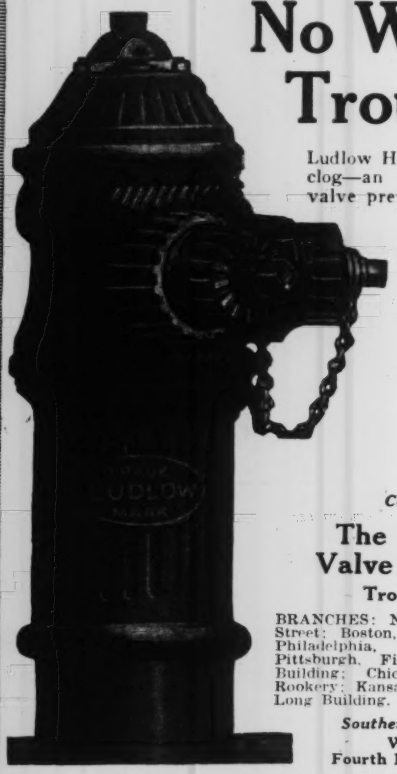
No Winter Troubles!



Ludlow Hydrants will never clog—an automatic drain valve prevents it.

There is no delicate mechanism to wear out or break.

Rubber faced gate wedges squarely against a bronze seat without rub, grind or wear.

Operates without water hammer.

Works come out easily through the top, and require no digging or use of wrenches.

Will not flood if they are broken off.

Catalog?

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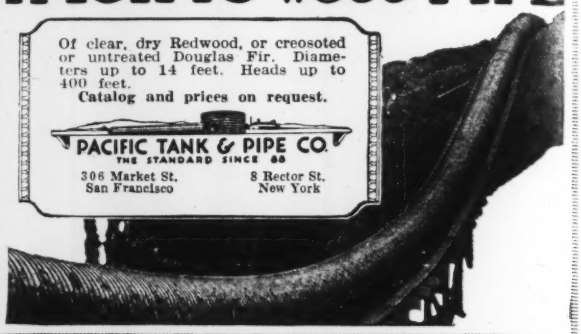
PACIFIC wood PIPE



Of clear, dry Redwood, or creosoted or untreated Douglas Fir. Diameters up to 14 feet. Heads up to 400 feet.
Catalog and prices on request.

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THE STANDARD SINCE 68

306 Market St., San Francisco
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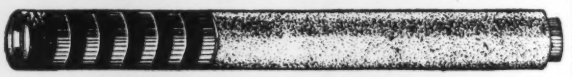

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Will furnish Pipe to suit Conditions.

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Hand or Motor Operated Hydraulic Gate Hoists—
Standard Capacities up to 60,000 pounds

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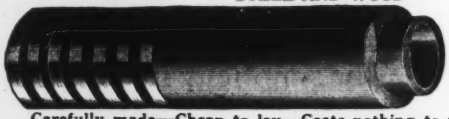

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For Water, Gas and High Pressure Service

Save 25% to 50% by using Wyckoff Wood Pipe instead of Cast Iron Pipe

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Fully Function

in dirty water, swift streams, rivers full of ice and debris, sewers, chemical tanks, filter plants, irrigation systems. They are readily adapted to all conditions.
SIMPLE TO INSTALL—SIMPLE MECHANISM.

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Indicating, recording, controlling—are the accomplishments of an organization which for more than seventy years has been continuously alert to the needs of every industry where temperature is a factor in manufacturing processes.

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Manufacturers of

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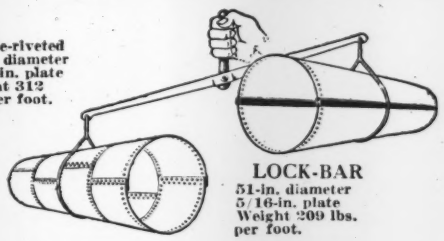

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is generally given a preference of 3 in. less diameter than riveted steel pipe for a given capacity—and will carry approximately 30% greater working pressure than riveted steel pipe of similar plate thickness. Its coefficient of friction is the same as new cast iron pipe *and never grows less.*

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STRONG AS THE PLATE ITSELF

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CAST IRON PIPE

no lead: no pouring: no bell holes
WATER SUPPLY AND FIRE PROTECTION
Tight! Flexible! Dependable!

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A New
PIPEHANGER
Patent Pending
for better, faster work

This pipe and cable hanger is of special interest to contractors and construction companies. It embodies all of the desirable features in that it may be used on horizontal or vertical structural beams, may be clamped on quickly without the necessity of drilling holes, is adjustable to various sized beams, and may be used for one pipe or a bank of pipes.

The hanger is firm when in position, but easy to move if necessary, and it may be taken down and used elsewhere if the occasion arises.

Drawings, costs or any further information furnished upon request.

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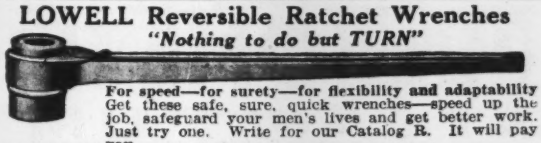
LOWELL Reversible Ratchet Wrenches
"Nothing to do but TURN"



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TRADE **"LEADITE"** MARK
Registered U. S. Patent Office
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NO CAULKING
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THE LEADITE COMPANY, 1512 Land Title Bldg., Phila., Pa.
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TRASH *and* SEWAGE PUMP

(Patented)

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For Water and Gas, Flange Pipe and Fittings

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Steam and Power Deep Well Pumps, Single and Double Acting, Cook's Patent Brass Tube Well Strainers, Deep Well Cylinders, Sucker Rods and Well Tools, Deep Well Pumping Systems installed complete.

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Cook Deep Well Products have always been manufactured by A. D. Cook, Inc. The Cook Well Company of St. Louis, Mo., a selling organization, has retired from active business and has transferred its good will to A. D. Cook, Inc. Customers of the Cook Well Company will receive direct service by writing to A. D. Cook, Inc., Lawrenceburg, Ind.

McWANE PRECALKED JOINT PIPE **CAST IRON**

Standard fittings used. Catalog N.

Sizes 1¼ in. and Up — McWANE CAST IRON PIPE CO. Birmingham, Alabama — *No Bell Holes*

WOODWARD WATERWHEEL GOVERNORS

Built in All Types and Sizes from the Smallest to the Largest

Woodward Governor Company

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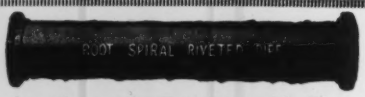
One-Fifth The Weight of Cast Iron Pipe



One-Third The Weight of Wrought Pipe

An Absolutely Tight Durable Pipe

Fully 50% stronger than Straight Riveted Pipe of equal thickness. Light weight and simplicity of bolted connections results in low handling and installation expense. Suitable for Conveying Water, Air, Gas, Exhaust Steam and Wood Pulp.

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Pipe Specialists Continuously Since 1867

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THE PELTON WATER WHEEL CO.

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Spiral Riveted Pipe. Large Diameter. Forge Welded Pipe. Forged Steel Pipe Flanges. Flexible Ball Joints. Send for Catalog

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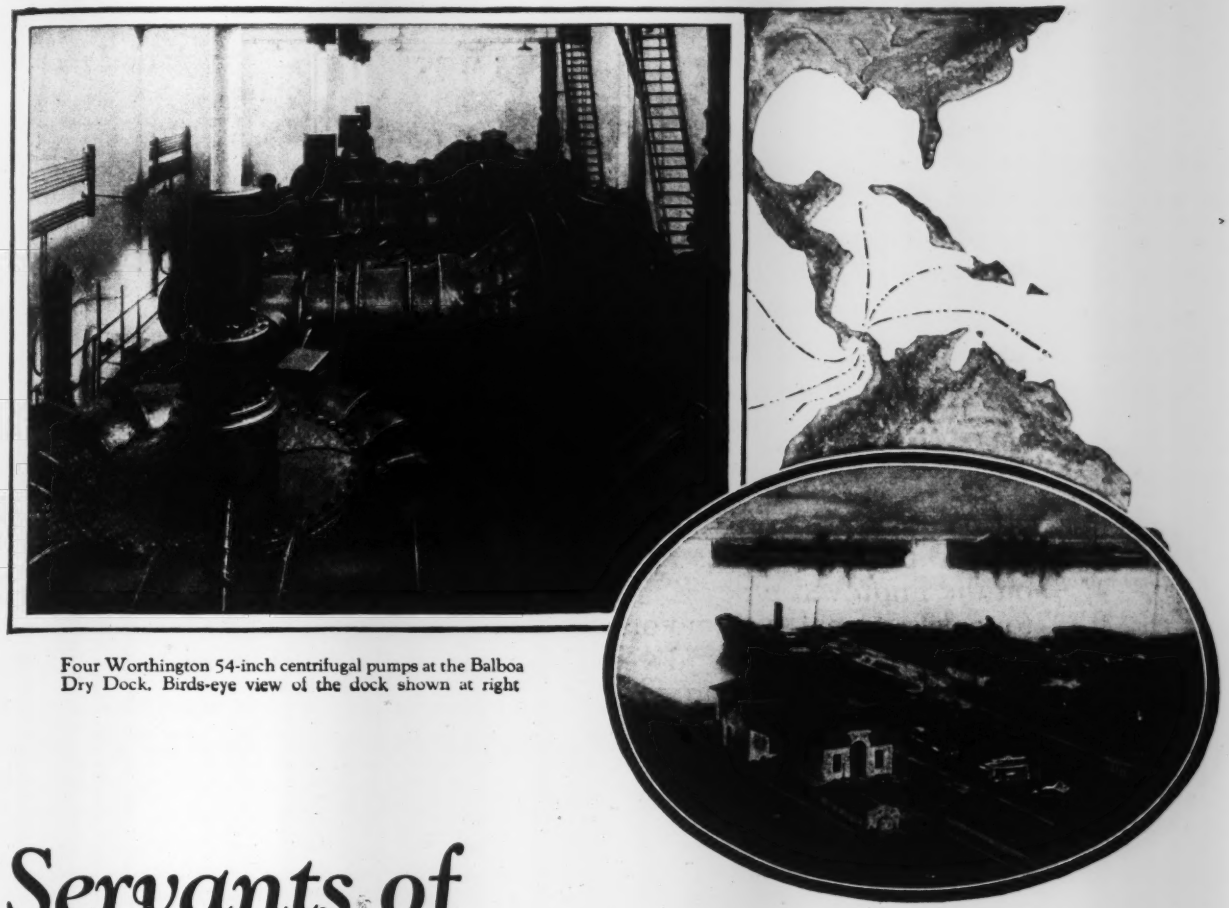

Four Worthington 54-inch centrifugal pumps at the Balboa Dry Dock. Birds-eye view of the dock shown at right

Servants of the whole world's commerce

AT Panama, through the forty-five mile man-made strait between the seas, the ships go past in a steady stream. Strange cargoes from the Orient, rare silks and precious drugs, pass within a biscuit toss of homely cargoes of coal from Norfolk for the West Coast; lumber comes from Oregon and sugar from Hawaii.

Behind the scenes at Panama is a great organization which the casual passenger seldom sees. All those stately ships need attention; fuel and stores, and often repairs—sometimes urgent, life-saving repairs. So at Balboa a great drydock is provided, and kept busy.

Essential to the operation of the drydock are the four great 54-inch Worthington centrifugal pumps shown in the picture. It is through the speed, dependability and efficiency of these pumps in emptying the dock that ships needing repairs can obtain them, and go on their way without serious delay to their voyages.

The greatest drydocks in the world—the huge dock at South Boston, the naval docks at Norfolk, Philadelphia and the giant floating dock at Southampton, England—are equipped with Worthington pumps. On land or sea, in power-plants, in city waterworks, in great irrigation systems, as well as on ships and in drydocks, Worthington pumps are faithful servants of modern civilization.

1610-2

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115 BROADWAY, NEW YORK BRANCH OFFICES IN 24 LARGE CITIES

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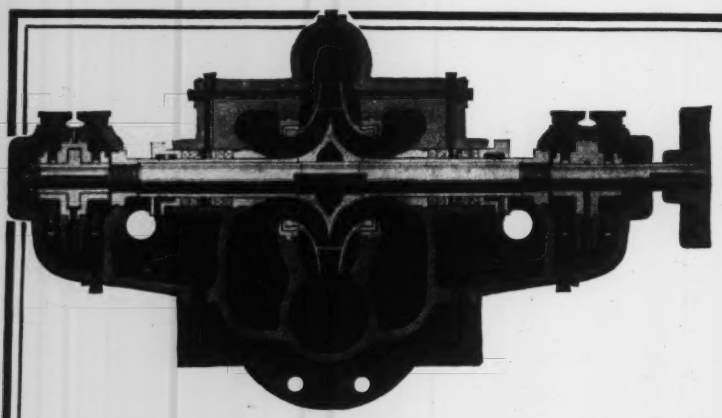

An Improved Type "S" Centrifugal Pump
with many refinements

If you are considering pumps for capacities between 300 and 3000 G.P.M. and heads 70 feet and below, let us quote you on the improved type "S" pump and you will be surprised to see what small size motors can be used. The saving with a 6-inch pump is around 4 H.P. or approximately $180.00 for 3000 hours pumping.

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S. Morgan Smith Company
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Builders of
HYDRAULIC TURBINES

If interested, write Dept. "E" for Bulletin.

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CENTRIFUGAL PUMPS
Since 1864 we have been building Centrifugal Pumps, Hydraulic Dredges and Steam Engines.
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Agents in Principal Cities.

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PUMPS
Manistee Iron Works Co., Manistee, Michigan

Steam Turbines for all speed and steam conditions; capacities up to 15,000 hp. Catalog D-41.
Double Helical Speed Reducing Gears. Catalog G-41.
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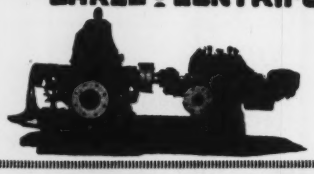
EARLE : CENTRIFUGAL - PUMPS



For all purposes where Centrifugal Pumps of the better class are adapted.

The Earle Gear & Mach. Co.
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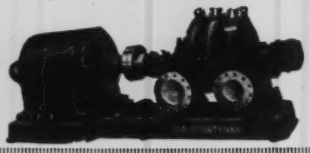
Philadelphia, Pa.

LECOURTENAY
CENTRIFUGAL PUMPS



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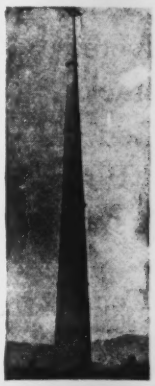

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Inside top diameter 3 ft. 6 in.

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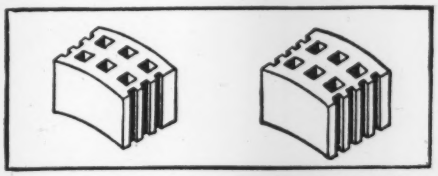

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have been built to meet every boiler, smelter and furnace plant condition. Wide experience in building is one of the reasons why there is no failure on record. Let us submit a preliminary design and cost estimate. **Write for Bulletin No. 60.**

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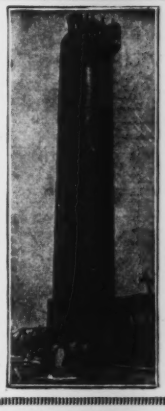

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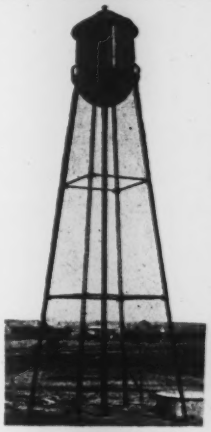

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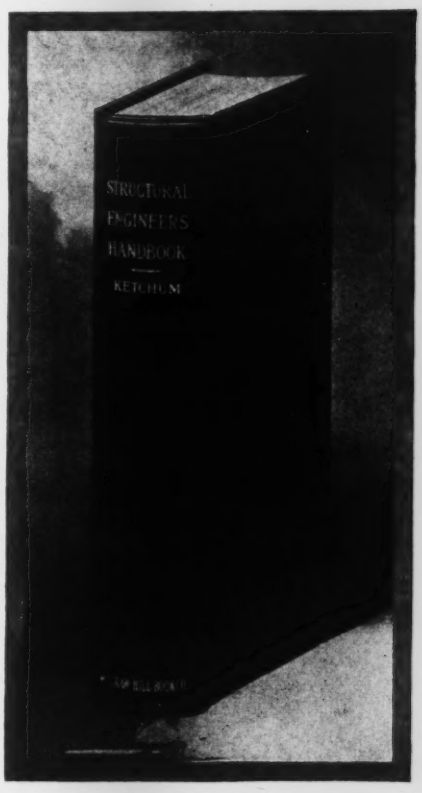

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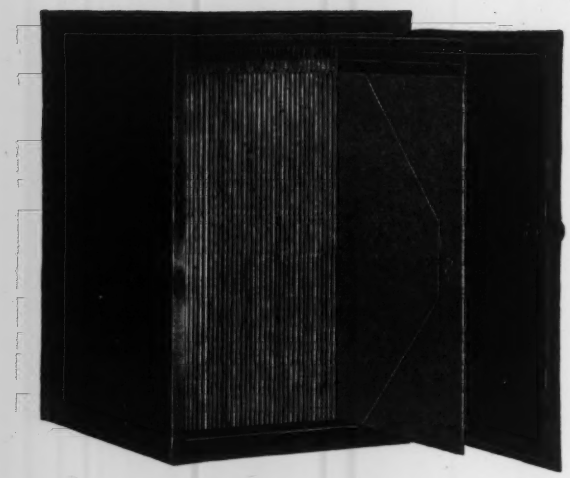

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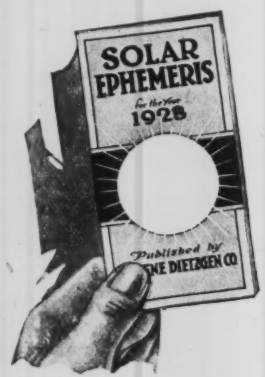

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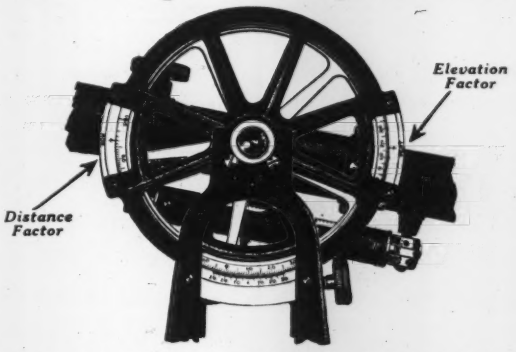

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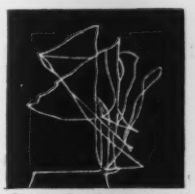

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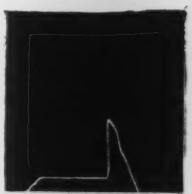

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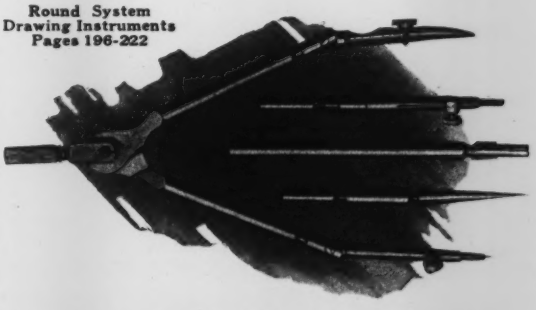

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Webster Manuf. Co.

Coal & Ore-Conveying Mchy.
Barber-Greene Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Lidgerwood Mfg. Co.
Link-Belt Co.
McMyler Interstate Co.
Mead-Morrison Mfg. Co.
Nelson Iron Works, N. P.
Specialty Engr. Co.
Webster Manuf. Co.

Coal-Storage Systems
Haiss Mfg. Co., Geo.
Lidgerwood Mfg. Co.
Link-Belt Co.
Mead-Morrison Mfg. Co.

Cofferdams, Steel
Bethlehem Steel Co.

Column Clamps
Concrete Steel Co.
Pyle-Rogers Corp.
Universal Form Clamp Co.
Washington Steel Form Co.

Column Forms
Blaw-Knox Co.
Concrete Steel Co.
Heltzel Steel Form & Ir. Co.

Column, Wrapping
National Steel Fabric Co.

Compressors, Air, Heavy Duty
Allis-Chalmers Mfg. Co.
Chicago Pneu. Tool Co.
McKiernan-Terry Drill Co.
Rix Compressed Air & Drill Co.
Sullivan Mchy. Co.
Westinghouse Tr. Brake Co.
Worthington Pump & Mchy. Corp.

Compressors, Air, Portable
Cement-Gun Co.
Chicago Pneu. Tool Co.
Domestic Eng. & Pump Co.
Rix Compressed Air & Drill Co.
Schramm, Inc.
Sullivan Mchy. Co.

Concrete Floor Hardener
Anti-Hydro Waterpr'f'g Co.
General Chemical Co.
Master Builders Co.
Toch Brothers.
Truscon Laboratories

Concrete Making Machinery
Ransome Concrete Mchy. Co

Concrete Reinforcement
American Steel & Wire Co.
Bethlehem Steel Co.
Brown Hoisting Mchy. Co.
Carnegie Steel Co.
Concrete Steel Co.
Consolidated Expanded Metal Cos.
Kalman Steel Co.
Keystone Gypsum Fireproofing Co.
Laclede Steel Co.
Mitchell-Tappen Co.
National Steel Fabric Co.
Northwestern Expanded Metal Co.
Rail Steel Products Assn.
Ryerson & Son, Joseph T.
Universal Form Clamp Co.
Wickwire Spencer Steel Corp.

Condensers
Worthington Pump & Mchy. Corp.

Contractors
Cement-Gun Construction Co.
Foundation Co., The
Gunite Concrete & Const. Co.
Indiana Gunite Constr. Co.
MacArthur Conc. Pile & Foundation Co.
Merritt-Chapman & Scott Corp.
Spencer, White & Prentis
Stone & Webster, Inc.

Conveyors, Belt
Austin Western Rd. Mch. Co.
Barber-Greene Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Link-Belt Co.
Smith Engineering Works
Specialty Engr. Co.
Webster Manuf. Co.

Conveyors, Bucket
Barber-Greene Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Nelson Iron Works, N. P.
Specialty Engr. Co.
Webster Manuf. Co.

Corner Bead Metal
Consolidated Expanded Metal Cos.
Northwestern Expanded Metal Co.

Cranes, Crawling Tractor
Austin Machinery Corp.
Industrial Works
Link-Belt Co.
Universal Crane Co.

Cranes, Electric
Industrial Works
Universal Crane Co.

Cranes, Gasoline
Austin Machinery Corp.

Cranes, Locomotive
Austin Machinery Corp.
Bay City Dredge Works
Brown Hoisting Mchy. Co.
Erie Steam Shovel Co.
Industrial Works
Link-Belt Co.
McMyler Interstate Co.
Marion Steam Shovel Co.
Ohio Locomotive Crane Co.
Orton & Steinbrenner Co.
Osgood Company
Thew Shovel Co.
Universal Crane Co.

Cranes, Motor-Truck
Universal Crane Co.

Cranes, Traveling
Brown Hoisting Mchy. Co.
Northern Engineering Wks.
Toledo Crane Co.
Whiting Corporation

Creosoted Blocks, Timber Poles, Cross-Arms Lumber,
Amer. Creosoting Co. (Ky.)
Colonial Creosoting Co.
Eppinger & Russell Co.
Georgia Creosoting Co.
Jennison-Wright Co.
Long Bell Lumber Co.
Republic Creosoting Co.
Southern Wood Preserv. Co.
Wyckoff Pipe & Creo. Co.

Creosoting
Amer. Creosoting Co. (Ky.)
Colonial Creosoting Co.
Eppinger & Russell Co.
Georgia Creosoting Co.
Jennison-Wright Co.
Tar Products Corp.
Wyckoff Pipe & Creo. Co.

Creosoting Oils
Protexol Corp.

Crushers and Pulverizers
Allis-Chalmers Mfg. Co.
Austin-Western Rd. Mch. Co.
Brown Hoisting Mchy. Co.
Smith Engineering Works
Universal Road Mchy. Co.

Culverts, Corrugated
Armco Culvert & Flume Mfrs. Assn.
Austin-Western Rd. Mch. Co.
Hardesty Mfg. Co., The R.

Culverts, Metal
Amer. Sheet & Tin Plate Co
Armco Culvert & Flume Mfrs. Assn.
Austin-Western Rd. Mch. Co.
Hardesty Mfg. Co., The R.
U. S. Cast Ir. Pipe & Fdy. Co.

Culverts, Nestable & Riveted Corrugated
Armco Culvert & Flume Mfrs. Assn.

Curbs, Steel Protected
Concrete Steel Co.

Dams
Ambursen Construction Co
Ambursen, N. F.
Foundation Co., The

Dealers, Equipment
(See Searchlight Section)

Derricks and Derrick Fittings
Amer. Terry Derrick Co.
Clyde Iron Works Sales Co
Dobbie Fdry. & Mach. Co.
Haiss Mfg. Co., Geo.
Hayward Co.
Insley Mfg. Co.
Lidgerwood Mfg. Co.
McMyler Interstate Co.
Mundy Hoist. Eng. Co., J. S.

Distributors, Pressure Oil
(See Road Oilers, Pressure)

Ditching Machinery
(See Excavators)

Docks and Harbor Work
Foundation Co., The
Merritt-Chapman & Scott Corp.
Raymond Concrete Pile Co.
Snare Corp., Frederick

Doors & Shutters, Steel Rolling
Peelle Company, The

Drafting Machines
Universal Drafting Mch. Co

Drafting Room Furniture and Supplies
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Pease Co., C. F.

Draglines
Austin Machinery Corp.
Bucyrus Company
Universal Crane Co.

Drawing Instruments
Pease Co., The C. F.

Drawing Materials
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Keuffel & Esser Co.
Pease Co., The C. F.

Drawing Tables
(See Tables and Bds. Drg.)

Dredges
Bay City Dredge Works
Bucyrus Company
Hayward Co.
Lidgerwood Mfg. Co.
Marion Steam Shovel Co.
Osgood Company

Dredges, Dipper
Austin Mchy. Corp.
Bucyrus Company
Erie Steam Shovel Co.
Osgood Company

Dredges, Hydraulic
Atlantic Gulf & Pacific Co
Bucyrus Company
Marion Steam Shovel Co.
Morris Machine Works

PERKINS PIVOTED BUCKET CARRIER

The Most Practical Type *of* Chain Conveyor *for* Handling Coal and Ashes

Power house requirements are just as vital as the requirements in any other department of your plant. The distribution of coal into bunkers and removal of ashes requires efficient machinery such as will reduce costs.

Modernization does not imply rebuilding your plant. Efficient coal and ashes handling equipment can be installed without jeopardizing production. Many power plants have been modernized the Webster way and have paid for themselves out of the savings effected.

Does your plant need modernizing? Is your coal handled efficiently? Does the removal of ashes give you concern? If so, a Perkins Pivoted Bucket Carrier or any of the power plant equipment listed below will cut down costs and make your plant efficient.

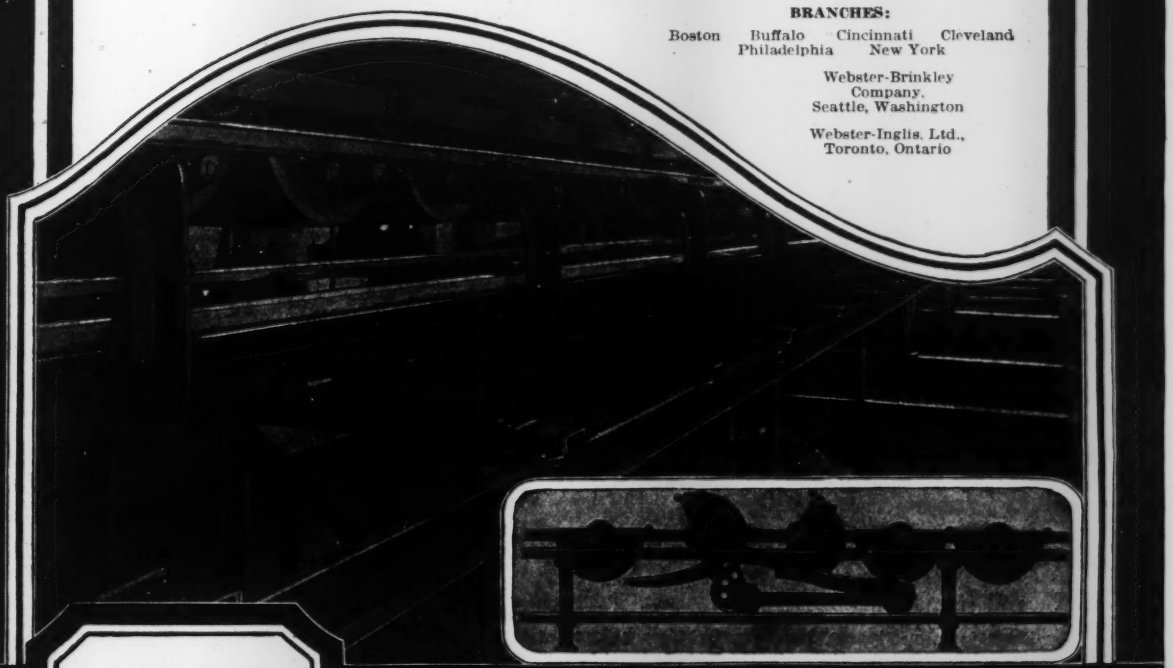
A Webster Engineer will be glad to confer with you and advise suitable equipment to reduce costs. Almost a half a century stands behind Webster products and this background of experience is your guarantee.

THE WEBSTER MFG. COMPANY
4500-4560 Cortland Street, CHICAGO

BRANCHES:
Boston Buffalo Cincinnati Cleveland
Philadelphia New York

Webster-Brinkley Company,
Seattle, Washington

Webster-Inglis, Ltd.,
Toronto, Ontario



POWER-HOUSE EQUIPMENT

Track Hoppers and Feeders, Coal Crushers, Bucket Elevators, Pivoted Bucket Carriers, Weigh Larries, Coal Bunkers, Ash Skip Hoists, Flight Conveyors, Belt Conveyors, Gates and Spouts.

WEBSTER

Drills, Blast Hole
Sanderson-Cyclone Drill Co

Drills, Core
Acker Drilling Co.
McKiernan-Terry Drill Co
Sullivan Mchy. Co.

Drills, Rock
Chicago Pneu. Tool Co.
McKiernan-Terry Drill Co.
Rix Compressed Air & Drill Co.
Sullivan Mchy. Co.

Drums, Holding
Blaw-Knox Co.
Haiss Mfg. Co., Inc., Geo.
Hayward Co.

Dryers
Blaw-Knox Co.

Dryers, Sand and Gravel
Vulcan Iron Works of Pa.

Dump Bodies
N. Y. Central Iron Works Co

Economizers
Power Specialty Co.

Ejectors, Sewage
Pacific Flush Tank Co.

Elevators, Bucket
Austin-Western Rd. Mch.Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Hendrick Mfg. Co.
Link-Belt Co.
Monighan Mach. Co.
Nelson Iron Works, N. P.
Ohio Locomotive Crane Co.
Smith Engineering Works
Webster Mfg. Co.

Elevators; Contractors' Material
Austin-Western Rd. Mch.Co.
Barber-Greene Co.
Haiss Mfg. Co., Inc., Geo.
Insley Mfg. Co.
Ransome Concrete Mchy. Co
Smith Engineering Works
Thomas Elevator Co.

Engineers, Roofing
Amer. Cement Tile Mfg. Co.
Federal Cement Tile Co.
Marks Corp., The H. E.

Engineers
(See also Directory of Engineers)
Atlantic Gulf & Pacific Co.
Foundation Co., The
MacArthur Conc. Pile & Foundation Co.
Merritt-Chapman & Scott Corp.
Raymond Concrete Pile Co.
Spencer, White & Prentis
Stone & Webster, Inc.

Engineers' and Draftsmen's Instruments and Supplies
Beckmann Co., L.
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Gurley, W. & L. E.
Keuffel & Esser Co.
Lufkin Rule Co.
Weber Co., The F.
Wiebush & Hilger, Ltd.

Engines, Gas, Gasoline & Oil
Allis-Chalmers Mfg. Co.
Chicago Pneu. Tool Co.
Climax Engr. Co.
National Meter Co.
Schramm, Inc.
Standard Scale & Supply Co
Worthington Pump & Mchy. Corp.

Engines, High Duty Water Works
Morris Machine Works

Engines, Hoisting
(See Hoists)

Engines, Portable
Climax Engr. Co.

Engines, Steam
Chicago Pneu. Tool Co.

Engines, Traction
Best Tractor Co., C. L.

Excavator, Cableway
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co
Mundy Hoist. Eng. Co., J. S.

Excavators, Ditch & Trench
Austin Mchy. Corp.
Bay City Dredge Works
Buckeye Tract. Ditcher Co.
Marion Steam Shovel Co.
Moore Trench Mch. Co.
Osgood Company
Parsons Co.
Thew Shovel Co.

Excavators, Dragline
Austin Machinery Corp.
Bay City Dredge Works
Bucyrus Company
Erie Steam Shovel Co.
Hayward Co.
Link-Belt Co.
Marion Steam Shovel Co.
McMyler-Interstate Co.
Mead-Morrison Mfg. Co.
Osgood Company

Expanded Metal
Consolidated Expanded Metal Cos.
Northwestern Expanded Metal Co.
Truscon Steel Co.

Expansion Bolts
National Lead Co.

Filters, Water, Municipal and Industrial
Amer. Water Softener Co.
Leopold Co., F. B.
Norwood Engr. Co.
Roberts Filter Mfg. Co.

Fireproofing Material & Construction
Marks Corp., H. E.
National Steel Fabric Co.
Northwestern Expanded Metal Co.
Peelle Company, The

Floor, Asphalt Mastic
Standard Oil Co. of N. Y.
Texas Co., The

Floor Hardener, Concrete
(See Conc. Floor Hardener)

Floor, Wood Block
Jennison-Wright Co.
Republic Creosoting Co.
Southern Wood Preserv. Co.

Flooring, Fireproof
Irving Iron Works
Kerlow Steel Flooring Co.
Marks Corp., H. E.
National Steel Fabric Co.

Flumes
Continental Pipe Mfg. Co.

Flumes, Iron & Steel
Armco Culvert & Flume Mfrs. Assn.
Blaw-Knox Co.
Hardesty Mfg. Co., R.

Forgings
Bethlehem Steel Co.
Carnegie Steel Co.

Form Clamps
Concrete Steel Co.
Insley Mfg. Co.
Pyle-Rogers Corp.
Universal Form Clamp Co.
Washington Steel Form Co.

Form Tighteners
Concrete Steel Co.
Hawley Tie Bolt Co.
Marion Malleable Iron Wks.

Forms, Culvert, Road, Sewer, Tunnel, etc.
Blaw-Knox Co.
Foote Conc. Mchy. Co.
Heltzel Steel Form & Ir. Co.
Lakewood Engr. Co.

Forms for Curb and Gutter
Blaw-Knox Co.
Heltzel Steel Form & Ir. Co.

Forms for Walls, Building Construction, etc.
Blaw-Knox Co.
Concrete Steel Co.
Heltzel Steel Form & Ir. Co.

Foundations
Foundation Co., The
MacArthur Concrete Pile & Foundation Co.
Merritt-Chapman & Scott Corp.
Raymond Concrete Pile Co.
Simplex Concrete Pile Association, Inc.
Spencer, White & Prentis.
Underpinning & Found. Co.

Frogs and Switches, Railway
Bethlehem Steel Co.
Foster Co., L. B.
Ramapo Ajax Corp.

Gas Holders
Chicago Bridge & Iron Wks.

Gas Producers
Blaw-Knox Co.

Gates, Sluice
Chapman Valve Mfg. Co.
Coffin Valve Co.
Coldwell-Wilcox Co.
Hardesty Mfg. Co., R.

Gauges, Loss of Head
Simplex Valve & Meter Co.

Gauges, Rates of Flow
Simplex Valve & Meter Co.

Gears
Earle Gear & Mach. Co.
Link-Belt Co.
Vulcan Iron Works of Pa.

Gears, Worm Reduction
De Laval Steam Turbine Co.

Generators, Electric
Allis-Chalmers Mfg. Co.

Glass, Fireproof
(See Wire Glass)

Governors, Waterwheel
Woodward Governor Co.
Worthington Pump & Mchy. Corp.

Graders, Road
Austin-Western Rd.Mchy.Co.
Erie Steam Shovel Co.
Hadfield-Penfield Steel Co.
Western Wheeled Scraper Co.

Granite
Granite Paving Block Mfrs.' Assn. of U. S.

Gratings, Safety
Irving Iron Works
Kerlow Steel Flooring Co.
Mitchell-Tappen Co.

Gravel Washing Plants
Link-Belt Co.

Grouting
Weber Engineering Co.

Gypsum
Keystone Gypsum Fireproofing Co.
Marks Corp., H. E.

Hammers, Pneumatic
Chicago Pneu. Tool Co.

Hammers, Steam Pile
(See Pile Hammers, Steam)

Heaters, Oil
Power Specialty Co.

Heaters, Tar & Asphalt
Honhorst Co., The Jos.
Littleford Bros.

Hoists, Concrete Tower
Clyde Iron Works Sales Co.
Insley Manufacturing Co.
Lakewood Engr. Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
National Hoisting Eng. Co.
Thomas Elevator Co.

Hoists, Contractors' Electric
Allis-Chalmers Mfg. Co.
Bay City Dredge Works
Clyde Iron Works Sales Co.
Dobbie Foundry & Mach.Co.
Flory Mfg. Co., S.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist. Eng. Co., J. S.
National Hoisting Eng. Co.
Northern Engineering Wks.
Orr & Sembower, Inc.
Porter Co., H. K.
Ransome Con. Mchy. Co.
Thomas Elevator Co.
Vulcan Iron Works of Pa.

Hoists, Contractors' Gasoline
Clyde Iron Works Sales Co.
Domestic Eng. & Pump Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist. Eng. Co., J. S.
National Hoisting Eng. Co.
Schramm, Inc.
Thomas Elevator Co.
Vulcan Iron Works of Pa.

Hoists, Contractors' Steam
Allis-Chalmers Mfg. Co.
Clyde Iron Works Sales Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist Eng. Co., J. S.
National Hoisting Eng. Co.
Orr & Sembower, Inc.
Thomas Elevator Co.
Vulcan Iron Works of Pa.

Hoists, Hydraulic Head Gates
Dilts Machine Wks., Inc.

Hoists, Motor, Truck
Mead-Morrison Mfg. Co.

Hoists, Pneumatic
Sullivan Machinery Co.
Whiting Corporation

Hoists, Skip
Link-Belt Co.
Mead-Morrison Mfg. Co.
Nelson Iron Works, N. P.
Thomas Elevator Co.

Hoppers, Concrete
Insley Manufacturing Co.
Ransome Concrete Mchy. Co.

Hoppers, Steel
Erie Steel Constr. Co.
Heltzel Steel Form & Ir. Co.
Honhorst Co., The Jos.
Littleford Bros.

Hose, Steam, Air & Water
Chicago Pneu. Tool Co.
Goodall Rubber Co.

Hydrants
Chapman Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Smith Mfg. Co., A. P.
Wood & Co., R. D.

Hydraulic Giants
Amer. Spiral Pipe Wks. Co.

Inserts, Concrete
Concrete Steel Co.

Inspecting Laboratories
(See Directory of Engineers)

Instruments, Drawing
Keuffel & Esser Co.

Instruments, Surveying
Ainsworth & Sons, Wm.
Brandis & Sons
Berger & Sons, C. L.
Buff & Buff Mfg. Co.
Gurley, W. & L. E.
Keuffel & Esser Co.
Lietz Co., A.
Weber Co., The F.

Insulation, Misc.
Texas Co., The

Iron Work, Structural and Ornamental
Hendrick Mfg. Co.
Irving Iron Works Co.
Kerlow Steel Flooring Co.
Ryerson & Son, Jos. T.
Snead Architect. Iron Wks.

Jacks, Lifting
McKiernan-Terry Drill Co.
Norton, Inc., A. O.

Joints, Expansion Paving
Carey Co., The Philip

Joints, Filler Paving
Standard Oil Co. of N. Y.
Texas Co., The

Joints, Flexible Pipe
Central Foundry Co.
U. S. Cast Ir. Pipe & Fdy. Co.

Kilns, Rotary and Vertical
Vulcan Iron Works of Pa.

Ladder Steps, Steel
Irving Iron Wks. Co.

Lath, Expanded Metal
Armco Culvert & Flume Mfrs. Assn.
Mitchell-Tappen Co.
National Steel Fabric Co.
Northwest'n Exp. Metal Co.

Leadite
Leadite Co., Inc., The

Lights, Contractors'
Carbic Manufacturing Co.

Loaders, Car & Wagon
Austin Machinery Corp.
Austin Western Rd. Mch. Co.
Barber-Greene Co.
Erie Steam Shovel Co.
Haiss Mfg. Co., Inc., Geo.
Link-Belt Co.
Nelson Iron Works, N. P.
Specialty Engr. Co.

Locomotives, Compressed Air
Baldwin Loco. Works
Porter Co., H. K.

Locomotives, Electric
Baldwin Loco. Works
Vulcan Iron Works of Pa.

Locomotives, Fireless Steam
Porter Co., H. K.

Locomotives, Gasoline
Baldwin Loco. Works
Davenport Loco. Works
Fate Root Heath Co.
Hadfield-Penfield Steel Co.
Midwest Loco. Works.
Vulcan Iron Works of Pa.

Locomotives, Steam
Baldwin Loco. Works
Davenport Locomotive Wks.
Porter Co., H. K.
Vulcan Iron Works of Pa.

Locomotives, Storage Battery
Vulcan I ron Works of Pa.

Lubricants
Texas Co., The

Lumber
Eppinger & Russell Co.
Lawson & MacMurray
Long Bell Lumber Co.

Manhole Covers
Central Foundry Co.

Manometers
Simplex Valve & Meter Co.

Metal Protective Paints
Eager-Picher Lead Co.

Meter Boxes
Pittsburgh Meter Co.

Meter Provers
Hersey Manuf. Co.
Pittsburgh Meter Co.

Meters, Boiler Feed Water
Builders Iron Foundry

Meters, Current
Gurley, W. & L. E.

Meters, Gas and Steam
Builders Iron Foundry
National Meter Co.
Wallace & Tiernan Co., Inc.

Meters, Venturi
Builders Iron Foundry

Meters, Water, Oil, etc.
Builders Iron Foundry
Gamon Meter Co.
Hersey Manuf. Co.
National Meter Co.
Neptune Meter Co.
Pittsburgh Meter Co.
Simplex Valve & Meter Co.
Worthington Pump & Mchy. Corp.

Mixers, Asphalt
(See Mixers, Hot)

Mixers, Concrete
Austin Machinery Corp.
Cement-Gun Co.
Foote Conc. Mchy. Co.
Lakewood Engineering Co.
Orr-Sembower, Inc.
Ransome Concrete Mchy. Co.
Schramm, Inc.
Standard Scale & Supply Co.

Mixers, Grout
Austin Machinery Corp.
Ransome Concrete Mchy. Co.
Union Iron Works

Mixers, Hot
Austin Machinery Corp.

Mixers, Mortar
Austin Machinery Corp.
Ransome Concrete Mchy.

Mixers, Paving
Austin Machinery Corp.
Foote Conc. Mchy. Co.
Ransome Concrete Mchy. Co

Mixers, Pneumatic
Ransome Concrete Mchy. Co

Motors, Electric
Allis-Chalmers Mfg. Co.
Westinghouse Tr. Brake Co

Motor-Truck Bodies
N. Y. Central Iron Wks. Co

Motor Trucks
(See Trucks, Motor)

Oil Clothing
Goodall Rubber Co.

Oil Lubricating
Texas Co., The

Oxy-Acetylene Apparatus
Blaw-Knox Co.
Oxweld Acetylene Co.

Packing,
Goodall Rubber Co.
Jenkins Bros.

Paints, Graphite
Truscon Laboratories

Paints, Light Reflecting
Truscon Laboratories

Paints, Metal Protective
Carey Co., The Philip
Eagle-Picher Lead Co.
National Lead Co.
Toch Brothers.
Protexol Corp.
Truscon Laboratories

Pavement Breakers
Buckeye Tract. Ditcher Co

Paving, Asphalt
Carey Co., Philip
Standard Oil Co. of N. Y
Texas Co., The

Paving Blocks, Creosoted Wood
(See Creosoted Block Timber, Poles, Cross-Arms, Lumber)

Paving Blocks, Granite
Granite Paving Block Mfrs

Paving Brick
Nat'n'l Paving Brick Mfrs Assn.

Paving, Cold Patching
Standard Oil Co. of N. Y.
Texas Co., The

Penstocks
Blaw-Knox Co.
Chicago Bridge & Iron Wks

Pile Drivers
Industrial Works
McKiernan-Terry Drill Co
McMyler Interstate Co.
Union Iron Works

Pile Hammers, Steam
Industrial Works
McKiernan-Terry Drill Co.
National Hoisting Eng. Co.
Union Iron Works
Vulcan Iron Works of Chic

Piles, Concrete
Foundation Co., The
MacArthur Concrete Pile & Foundation Co.
Raymond Concrete Pile Co
Simplex Concrete Pile Association, Inc.
Spencer, White & Prentis

Piles, Creosoted Wood
Jennison-Wright Co.
Long Bell Lumber Co.

Piling, Interlocking Steel
Bethlehem Steel Co.
Carnegie Steel Co.
Foundation Co., The

Pipe, Bends
East Jersey Pipe Co.
National Valve Mfg. Co.

Pipe, Cast Iron
Amer. Cast Iron Pipe Co.
Central Foundry Co.
Fox & Co., John
Glamorgan Pipe & Fdry. Co
McWane Cast Iron Pipe Co
Nat'l Cast Iron Pipe Co.
U.S. Cast Ir. Pipe & Fdry.Co.
Warren Fdry. & Pipe Co.
Wood & Co., R. D.

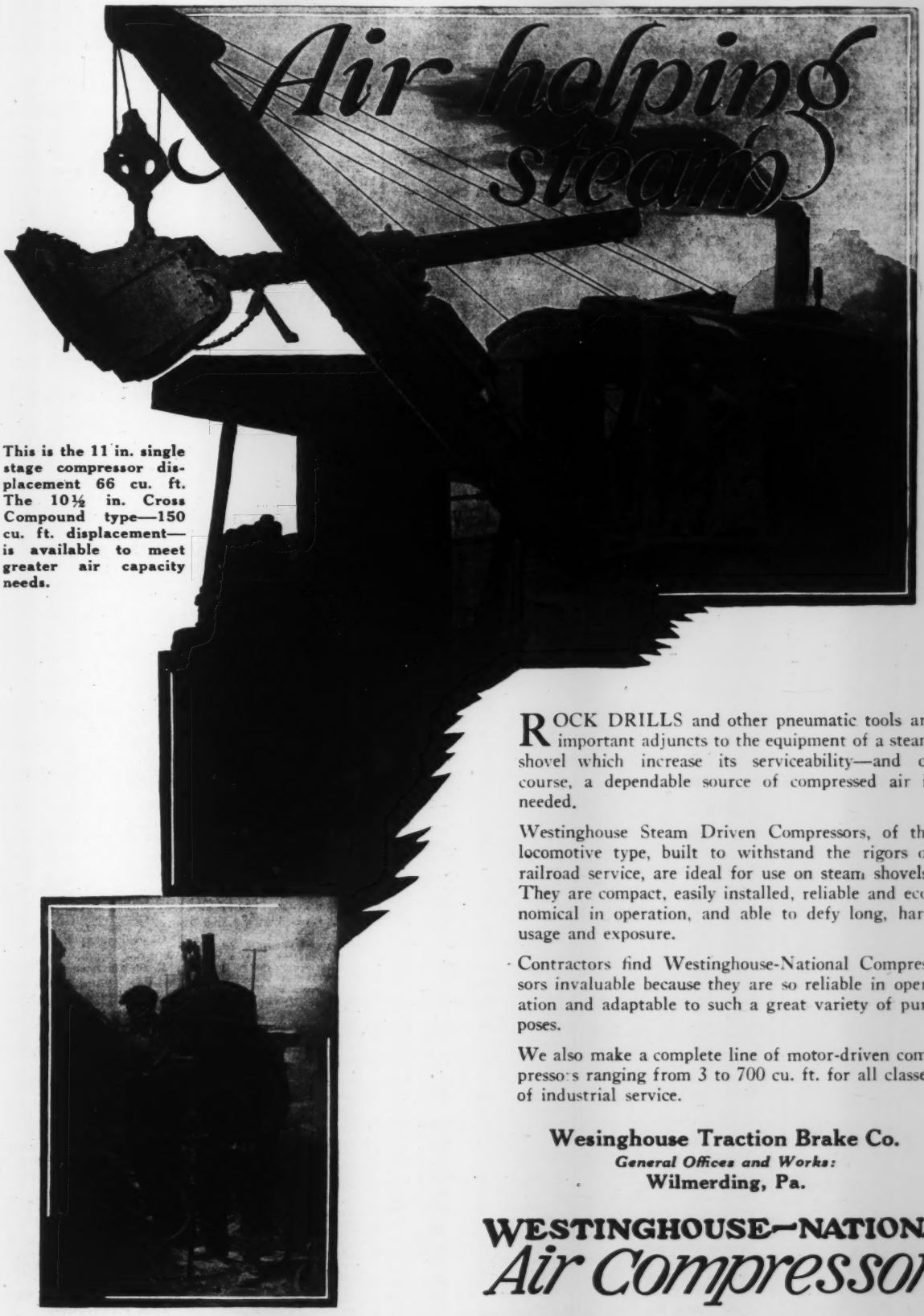
Pipe, Concrete
Independent Conc. Pipe Co
Lock Joint Pipe Co.

Pipe, Corrugated
Austin-Western Rd. Mch. Co
Hardesty Mfg. Co., The R

Pipe Covering, Asbestos
Carey Co., The Philip

Pipe Covering, Wood
Michigan Pipe Co.
Standard Wood Pipe Co.
Wyckoff & Son Co., A.

Pipe Fittings
Builders Iron Foundry
Central Foundry Co.
U.S. Cast Ir. Pipe & Fdy.Co.
Westinghouse Tr. Brake Co.



This is the 11 in. single stage compressor displacement 66 cu. ft. The 10½ in. Cross Compound type—150 cu. ft. displacement—is available to meet greater air capacity needs.

ROCK DRILLS and other pneumatic tools are important adjuncts to the equipment of a steam shovel which increase its serviceability—and of course, a dependable source of compressed air is needed.

Westinghouse Steam Driven Compressors, of the locomotive type, built to withstand the rigors of railroad service, are ideal for use on steam shovels. They are compact, easily installed, reliable and economical in operation, and able to defy long, hard usage and exposure.

Contractors find Westinghouse-National Compressors invaluable because they are so reliable in operation and adaptable to such a great variety of purposes.

We also make a complete line of motor-driven compressors ranging from 3 to 700 cu. ft. for all classes of industrial service.

Wesinghouse Traction Brake Co.
General Offices and Works:
Wilmerding, Pa.

WESTINGHOUSE—NATIONAL
Air Compressors

"QUALITY MACHINES FOR QUALITY SERVICE"

Pipe Flanges, Forged Steel
Amer. Spiral Pipe Wks. Co.

Pipe, Forge Welded
Amer. Spiral Pipe Wks. Co.

Pipe, Hangers
Potts, George

Pipe Joint Compounds
Leadite Co., Inc., The
Pacific Flush Tank Co.

Pipe, Lock Bar
East Jersey Pipe Co.

Pipe, Lock Joint
Lock Joint Pipe Co.

Pipe, Reinforced Concrete
Independent Conc. Pipe Co.
Lock Joint Pipe Co.

Pipe, Riveted Steel
Blaw-Knox Co.
East Jersey Pipe Co.
Petroleum Iron Works Co.
Tippett & Wood

Pipe, Sewer
Clay Products Co.
Dickey Clay Mfg. Co.
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1—The Barber-Greene Loader, model 42, that is being used by contractors all over the country.

2—The Barber-Greene Snow Loader. This machine can be converted into a material loader for summer work and offers the contractor a chance to make extra money during the winter on snow removal.

3—There are Barber-Greene Conveyors for all manner of material handling jobs and Barber-Greene Ditchers to handle your trenching contracts.

What 1924 Has Developed in Paving Layouts

Long and consistent runs on road and street paving jobs are almost entirely dependent upon the ability of the contractor's material handling equipment to keep his mixers busy. Every minute that a mixer loses in waiting for materials is reflected in decreased yardage and increased costs.

The paving business, today, is highly competitive. It has become necessary for the contractor to pay more attention to his material handling layouts and equipment, not only to increase his daily yardage, but to cut his overhead expenses.

To assure a steady flow of materials to their mixers, an increasing number of contractors are turning to the Barber-Greene System. This means the elimination of men on subgrade jobs, elimination of expensive units on central storage, and positive elimination of delays by batching at advance storage near the mixer.

Every year new methods and layouts are developed by contractors in the field in connection with their Barber-Greene equipment. During the past year there have been many new ones that have been proven extremely successful.

The Barber-Greene Company has assembled the more conspicuous of these jobs into their new booklet, *"Contracting With Barber-Greenes."* In addition to describing layouts it illustrates them, and, in a number of instances, shows the savings that Barber-Greenes have effected.

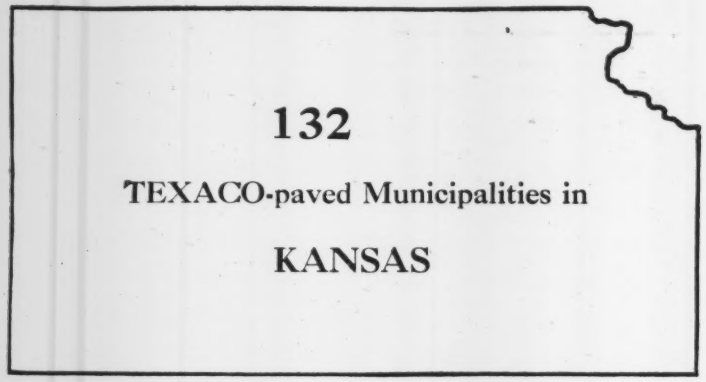
As *"Contracting With Barber-Greenes"* is so obviously of value to all contractors it will be sent to all those requesting it.

BARBER-GREENE COMPANY—*Representatives in 50 cities*—420 W. Park Ave., Aurora, Illinois

BARBER GREENE

Portable Belt Conveyors — Self Feeding Bucket Loaders

Coal Loaders . . . Automatic — Ditch Diggers . . Coal Feeders



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TEXACO-paved Municipalities in

KANSAS

In Kansas, too, it's TEXACO

Kansas, the central State of the Union, is an excellent example of what TEXACO Asphalt paving has accomplished in the Roads and Streets field.

No less than 132 of the municipalities of this State are being served today by some type of TEXACO paving.

Included are such leading Kansas cities as Wichita, Topeka, Leavenworth, Humboldt, Independence and others.

Length of Service

In such Kansas municipalities as Topeka, Abilene, Concordia, Eureka and Manhattan, TEXACO has passed its tenth year, and is headed toward an even greater service. The first pavement of TEXACO Asphalt to be constructed in Topeka was laid in 1910, and 14 years later, this pavement still renders an ideal service.

In Kansas, TEXACO Asphalt paving was given the opportunity to prove itself, *and has done so in characteristic fashion.*

Booklets sent on request.

TEXACO

New York
Philadelphia
Richmond
Boston
Jacksonville
New Orleans
Chicago

The Texas Company
ASPHALT SALES DEPT.
17 Battery Place, New York City

Cleveland
Oklahoma City
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Dallas
Minneapolis
St. Louis